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LECTURE I.

MR. PRESIDENT AND FELLOWS,—When you, Sir, the Council of the College, and Dr. Alexander Morison did me the honour of asking me to deliver the Morison lectures in 1899 I selected, after some consideration, aphasia, or rather certain questions connected with aphasia, as the subject to which I should direct your attention. In choosing this subject I was chiefly guided by the fact that to me aphasia is the most interesting subject in the whole range of neurology—nay, in the whole range of medicine. And I venture to think that, from a scientific point of view, it is quite as important as it is interesting; for by the study of the speech defects to which the term "aphasia" is applied we are able to get a better insight—though that insight is as yet very rudimentary and imperfect—into the manner in which some of the higher cerebral mechanisms, the integrity of which is essential for all our intellectual operations, work than by any other means with which we are as yet, or with which we probably ever will be, acquainted. It is unnecessary to say that aphasia is a subject of great difficulty and of great complexity; indeed, I do not think that I exaggerate when I say that in the study of aphasia one is necessarily brought into contact with almost all of the most important problems connected with the physiology and pathology of the brain and that in the study of speech derangements and aphasic symptoms at the bedside one may have to deal with almost every known form of cerebral disease.

In these lectures I shall not attempt to consider the subject systematically and as a whole. That is, I conceive unnecessary. There are many points connected with the etiology, diagnosis, prognosis, and treatment of cases of aphasia on which everyone is agreed. To recapitulate these points would serve no useful purpose. I propose rather to discuss some of the more debatable points connected with the subject, some of the questions as to which there are still great differences of opinion, and, in particular, to direct your attention, so far as my knowledge will enable me to do so, to the construction and working of the higher cerebral mechanisms concerned with speech and to the nature of the speech derangements or aphasic symptoms which result from lesions in different parts of those speech mechanisms. But even in dealing with aphasia in this way I must, in order to make my meaning clear, refer to many points, physiological, pathological, and psychological, with which many of my audience are well acquainted.

Further, I must of necessity repeat many things that I have already said in my published writings. But this, I conceive, does not require any apology, for, in the first place, I know by experience that much which one writes is never read. In the second place, I am firmly convinced that one can impress one's meaning more easily and more satisfactorily on most men's minds by means of spoken than by means of written speech—this, which is, I take it, the main reason why in this school of medicine we attach so much importance to lecturing as a means of instruction, is based on sound physiological principles, for, as I will presently point out in more detail, the auditory speech centre is the most important of all the speech centres. In most normal individuals, the auditory speech centre would seem to be the corner-stone of the whole speech edifice, the central point with which all of the speech centres are, either directly or indirectly, connected, the gateway through which both spoken speech and written speech symbols seem (in most normal individuals at least) finally to pass in order to be brought into connexion with what for the sake of convenience may be termed the "ideational" centres, and the point at which the nervous impulses which culminate in emissive speech, whether vocal or graphic, are, as Dr. H. C. Bastian has expressed it, first put into concrete speech form. And, again, spoken speech has the great advantage over written speech that in the latter one has to rely entirely, or almost entirely, upon the intellectual effect produced on the sensorium, whereas in the former one can supplement and enforce the intellectual effect by the emotional and expressive element—by the modulations which one gives to one's voice, by the emphasis which one places on different parts of the subject, and by facial and other gestures, all of which are of so much importance in keeping the attention and receptive centres of one's audience in a state of activity and in enabling one to carry conviction to their minds and to drive home, as it were, with full force one's meaning to their understandings. In the third place, in dealing with a subject so complicated and difficult as aphasia it is advisable and necessary again and again to discuss debatable points, in order that the difficulties may be cleared up and agreement ultimately arrived at. Some questions which to one man's mind may appear settled may to another man's mind appear quite uncertain. Let me give you an illustration: That the speech faculties are bilaterally represented in the brain; in other words, that the portions of grey matter in the right hemisphere, which correspond to the speech centres in the left hemisphere, are possessed of some sort of speech function (either potential or active) is, to my mind, unquestionable. But this opinion is by no means accepted by everyone. I recently had an opportunity of discussing this question with a distinguished alienist who informed me that he was not convinced that the posterior part of the third right frontal convolution—the right vocal speech centre as I term it, or Broca's centre in the right hemisphere—has anything to do with speech. Now, if differences of opinion exist with regard to this fundamental point—on which, in my judgment, the evidence is sufficiently clear—how much more must differences of opinion exist on other points on which our information is as yet very much less satisfactory and less complete.

DEFINITION OF APHASIA.

For practical purposes it is, I think, advisable to restrict the term aphasia to those derangements of speech which result from functional disturbance or organic disease of the *cerebral speech* mechanisms commonly and, as I think properly, so called.[1] And here the question of course arises, What is meant, or what should be meant, by the term *speech?* In my opinion it is advisable to restrict the term speech to vocal (articulate) speech and the other forms of speech which are generally considered to be the *direct* equivalents of vocal (articulate) speech—e.g., the written speech of educated persons who possess all their faculties, the tactile speech of blind persons, and the finger-speech and lip-reading speech of deaf persons. This definition is more restricted than that which is adopted by most writers on aphasia. Most authorities would, I suppose, agree with Dr. Joseph Collins in thinking that the term aphasia should include "all defects or disorders of intellectual expression, whether such disorders be the result of disarrangement or destruction of the receptive or of the emissive components of the speech mechanism, *or of anything which may be employed as the analogue of speech*" (no italics in the original).[2]

Looking at the matter purely from a practical point of view this conception of aphasia, which includes defects of pantomime (*asemia* or *amimia*), seems to me too extensive. I doubt whether it is advisable to include defects of pantomime under the term aphasia. A nod or a shake of the head may, of course, express a definite idea or proposition, and in the absence of inability to understand or to speak a foreign language pantomime may take the place of vocal and written speech, though in a very rudimentary and imperfect way. Strictly speaking, therefore, pantomime, more especially highly complicated pantomime, may be regarded as a direct equivalent of vocal speech. But in the absence of internal speech, commonly so called, in

[1] This definition would exclude all those speech derangements due to lesions in (1) the peripheral neuro-motor apparatus concerned in the production of vocal and written speech, cases, for example, of dysphasia, lallation, alalia, due to lesions in the pons Varolii and medulla oblongata; and (2) the peripheral auditory and visual apparatus (internal ear, auditory nerve, &c.)

[2] The Faculty of Speech, p. 6.

cases, for example, in which there is complete total aphasia (i.e., complete word deafness, complete word blindness, and complete vocal aphasia and agraphia), due to destruction of the cortical speech centres, thought and intellect are profoundly affected; in other words, in the absence of internal speech it is difficult or impossible, so far as our knowledge and information enable us to judge, to carry on any but the most elementary intellectual operations. On the other hand, while this is admitted it must also be allowed that a certain, though very inferior, kind of thought and intellectual operation may be carried on in such circumstances, and that some patients who are suffering from "total" aphasia (word deafness, word blindness, motor-vocal aphasia and agraphia), provided they are neither insensible nor completely paralysed, may be able to express (manifest or exteriorise as it has been termed), some of the comparatively limited thoughts and intellectual operations, which they are in such circumstances able to carry on, by means of pantomime. The mental condition of such patients resembles in some degree that of the lower animals.[3] That some of the lower animals, such as the dog, are able to think and to reason, though in a very rudimentary way, seems undoubted. That they may also be able to express their elementary ideas and desires, in an imperfect and rudimentary way, by means of some form of muscular movement must also be allowed. Further, some particularly intelligent dogs undoubtedly understand a limited number of the auditory speech symbols (words) used by man. And, again, the parrot can, as everyone knows, talk. But, notwithstanding these facts, everyone regards speech (i.e., articulate speech and its direct equivalents) as a faculty peculiar to man. Man's mental superiority over the lower animals is largely due to the fact that he is endowed with articulate speech. Hence I argue that, in considering the subject from a clinical and practical point of view, it is advisable to restrict the term aphasia to the derangements of that form of speech which is, practically speaking, peculiar to man, and that although, strictly speaking, pantomime may be regarded as an equivalent of speech, since it may be a mode of expressing thought (and not merely emotion), it is advisable *for practical purposes* to restrict the term aphasia to the derangements of vocal (articulate) speech and of its *direct* equivalents which are commonly regarded as peculiar to man.

It is interesting to note that in one of his earliest writings on aphasia Broca pointed out that the faculty of articulate language, the speech which is peculiar to man, is only part of a general faculty which he termed the faculty of expression—a faculty which is common both to man and the lower animals.[4] He states in referring to the origin of his epoch-making researches on aphasia: "I do not know what it is that animals want and what we have, and that is why I dissected the brains of individuals who had lost that something; my hope was to be able to establish the relation which exists between the central faculty and its manifestation."[5] Moxon, too, emphasised the difference between the speech (language) which is peculiar to man and ordinary voluntary movements: "So intimately" he says, "is language associated with the highest operations of the mind that logic—the science of verbal propositions—has always either taken its place amongst the purely mental sciences, or has been held as an adjunct but little subordinate in rank. On the other hand, the power of voluntary motion in the limbs, though of course in connexion with the intelligence, being shared equally with the most lowly animated beings, is accepted as almost without the pale of mental science."[6] Bastian, also, emphasises the difference between natural language (pantomime) and artificial or acquired language (speech). He says: "Amimia is the term that has been given to loss of the power of producing and of understanding what has been termed 'natural language' as opposed to 'artificial or acquired language'—that is, the loss of the power of producing and of understanding pantomime, as conveyed by gestures, alterations in facial expression, and by inflections of voice. ..... These defects vary in the same ratio as the intelligence of the individuals affected."[7]

Another reason why, in my opinion, it is inadvisable from a practical and clinical point of view to include mere defects of pantomime under the term aphasia is that, in some cases in which the patient is unable to express his thoughts by means of spoken or written speech, the only means by which it is possible to determine whether he understands what is said to him or what is communicated to him by means of written speech is to observe whether he can intelligently answer by means of pantomime the spoken and written questions which are put to him; in other words, in some cases of aphasia it is only by observing whether he intelligently reacts by means of pantomime to auditory and visual speech symbols that it is possible to determine whether he is suffering from word deafness and word blindness, as well as from motor aphasia and agraphia. Again, in other cases in which the patient is unable to understand spoken and written questions and in which he is unable to speak and to write, it is only by observing whether he intelligently reacts to pantomime and to tactile and other forms of stimulation that it is possible to determine whether his inability to understand spoken or written language and to express himself in vocal and in written speech is an aphasic defect (a local lesion affecting some part of the cerebral speech mechanism), or is the result of a purely intellectual defect, which interferes with the action of the ideational, intellectual, and expressive cerebral mechanisms *as a whole*. This point was also recognised by Broca. He pointed out the impossibility of distinguishing, in those cases in which pantomime as well as motor speech was lost, whether the inability to speak was due to a general defect of intelligence, *alogia*, as he termed it, or a speech defect (*aphemia*).

I submit, then, for the reasons which have just been advanced, that it is convenient and advisable, from a practical and clinical point of view, to exclude defects of pantomime and to limit the term aphasia to those derangements of speech which are the result of functional disturbance or organic disease in the higher cerebral speech mechanisms commonly and, I think, properly, so-called—viz., the higher cerebral mechanisms concerned in the reception and emission (*a*) of vocal (articulate) speech; (*b*) of written speech (in its various forms)—to which must also, of course, be added the higher cerebral mechanisms concerned in the reception and emission; (*c*) of the finger-speech of deaf-mutes; (*d*) of the finger-speech and lip-reading of blind but not deaf persons; and (*e*) of the finger-speech of deaf-mutes who are also blind (such as Laura Bridgman and Helen Keller)—speech mechanisms which may also, of course, be trained and developed in the normal individual as well as in the deaf and blind.

CONCEPTION OF APHASIA; CLASSIFICATION OF APHASIA; VARIETIES OF APHASIA.

It is unnecessary to say that our conception of the symptoms, or rather of the groups of symptoms, which are included under the term aphasia—for I need not say that the condition which we term aphasia is not a disease—is very much more extensive and comprehensive than it was some years ago. In the enormous development of our knowledge regarding aphasia which has taken place since Broca published his important observations, a very large number of different observers and thinkers, both at home and abroad, have taken part; and in this connexion it is a pleasure to note that some of the Fellows of this College—I refer in particular to my old teacher, the late Professor Sanders, to Sir William Gairdner, to Professor John Wyllie, and to Dr. William Elder—have played no inconspicuous part. As originally applied the term aphasia was limited to those derangements of speech which result from destruction of the posterior end of the lower (third) frontal convolution on the left side of the brain; and for a time after Broca's great discovery it was thought that aphasia or aphemia, as Broca himself termed it, was always the result of a destructive lesion in this very limited area of the brain. Since the year 1861 evidence has gradually been accumulated which has shown: (1) that aphasic symptoms may result from localised lesions in parts of the brain other than the posterior end of the third left frontal convolution; and (2) that while in the great majority of cases of aphasia the lesion is situated in the left hemisphere of the brain, since

[3] The comparison is not, of course, a very close one, for a patient affected with total aphasia is suffering from an extensive brain lesion attended with a profound brain disturbance, and the mental condition of such a patient may be—I do not, of course, say that it necessarily is—inferior to that of an intelligent dog.

[4] Mémoires d'Anthropologie, tome v., p. 98.

[5] Ibid., p. 99.

[6] British and Foreign Medico-Chirurgical Review, vol. xxxvii. (1866), p. 461.

[7] Aphasia and other Speech Defects, p. 236.

the great majority of persons are right-handed, the reverse is the case in most left-handed persons, at all events so far as the vocal speech centre is concerned.* The same statement applies, though with less force, to the auditory speech centre, and apparently with still less force to the visual speech centre and the motor writing centre.

In 1869 Dr. Bastian showed that the cerebral mechanisms concerned with speech are receptive as well as emissive and clearly indicated the existence, as separate and distinct varieties of aphasia, of word deafness and word blindness. In 1874 Wernicke showed that in cases of word deafness the lesion is situated in the posterior end of the first (upper) temporo-sphenoidal convolution and a few years later Kussmaul showed that in cases of word blindness the lesion is situated in the region of the left angular gyrus.

In short, for some time it has been recognised that all forms of speech have both an ingoing, afferent, or receptive mechanism, and an outgoing, efferent, or emissive mechanism, or, as we usually say, a sensory and a motor side, and that the "leading" or "driving" speech centres are not necessarily limited to the left side of the brain but are situated in that hemisphere of the brain which happens in the particular patient under observation to be the "leading" or "driving" side so far as the particular or individual speech faculty which in his case is involved is concerned. We consequently speak of *sensory* aphasia and of *motor* aphasia and we divide cases of sensory or receptive aphasia into two great primary forms—viz., *auditory* aphasia or word deafness—and *visual* aphasia or word blindness (alexia); and cases of motor or emissive aphasia into two great primary divisions—viz., motor aphasia, motor-vocal aphasia or *vocal* aphasia, as I think it is perhaps best termed, and graphic aphasia (agraphia).† But even in respect to the exact nature of these great primary forms of aphasia authorities are by no means agreed. Dr. Bastian, for example, denies the very existence of motor aphasia, since he believes that the so-called motor centres in the cerebral cortex are sensory centres, the cortical terminations of the afferent or ingoing impressions which result from movements. This fundamental question in cerebral pathology—viz., whether the so-called motor centres in the ascending frontal convolution are true motor centres or are sensory (kinæsthetic) centres—has a very important bearing upon the subject of aphasia, as we shall afterwards see when I come to discuss it in detail.

Again, Dejerine and many others doubt the existence of a graphic or writing speech centre and are of opinion that agraphia, or motor-graphic aphasia as it is termed by those who believe in the existence of a graphic speech centre, should not, strictly speaking, be regarded as a form of aphasia at all. Dejerine and his followers think that the so-called writing speech centre is merely a part of the ordinary motor centre (or of the ordinary kinæsthetic centre or of the kinæsthetic-motor centre, in accordance with the view which is taken of the function of the so-called motor area of the cerebral cortex) for the movements of the hand and forearm (upper extremity). This point I will also discuss in detail.

CENTRAL, SUB-CENTRAL, AND SUPRA-CENTRAL VARIETIES OF WORD DEAFNESS AND WORD BLINDNESS, MOTOR-VOCAL APHASIA, AND AGRAPHIA.

Further, the great primary forms of aphasia—word deafness, word blindness, vocal aphasia, and agraphia or graphic aphasia—have been divided into sub-varieties in accordance with the exact position of the lesion—i.e., whether it involves (*a*) the speech centres themselves or the nervous structures (the conducting fibres or portions of grey matter) which are situated (*b*) below or (*c*) above (on a higher cerebral level than) these speech centres; for, although it is often a matter of difficulty to determine this at the bedside, there seems to be little doubt that the speech derangements (the aphasic symptoms) differ in their exact character in those cases in which the lesion involves (destroys): (1) the speech centres themselves; (2) the nervous structures below the speech centres; or—but this point is much less certain—(3) the nervous structures above (on a higher cerebral level than) these speech centres.

The terms *cortical* or *pictorial* are applied by some writers to those cases of aphasia in which the lesion involves the speech centres themselves, the terms *sub-cortical* or *sub-pictorial* to those cases in which the lesion is situated below the speech centres, and the terms *supra-cortical* or *supra-pictorial* to those cases in which the lesion is situated above (on a higher cerebral level than) the speech centres.[10] Consequently some authorities speak (1) of cortical or pictorial, of sub-cortical or sub-pictorial, and of supra-cortical or supra-pictorial word deafness; (2) of cortical or pictorial, of sub-cortical or sub-pictorial, and of supra-cortical or supra-pictorial word blindness; (3) of cortical or pictorial, of sub-cortical or sub-pictorial, and of supra-cortical or supra-pictorial motor-vocal aphasia; and (4) of cortical or pictorial, sub-cortical or sub-pictorial, and of supra-cortical or supra-pictorial graphic aphasia. But the terms cortical and pictorial are, in my opinion, unsatisfactory. The terms cortical, sub-cortical, and supra-cortical are, I think, unsatisfactory, since there can be no doubt that in some of the cases of so-called sub-cortical aphasia (in some cases of sub cortical auditory aphasia, for example) the lesion is situated in the grey matter of the cortex and not in the sub-cortical white tissue—i.e., is in reality cortical—and that in some of the cases of so-called supra-cortical aphasia, if cases of complete supra-cortical aphasia actually occur, the lesion also involves the grey matter of the cortex—i.e., is cortical.

The terms pictorial, sub-pictorial, and supra-pictorial are also, to my mind, unsatisfactory, since there is strong reason to believe that the ideas or mental pictures, which word symbols or word percepts represent, are not directly called up in the mind by stimulation of the speech centres themselves; in other words, that the memory pictures or mental pictures of the ideas which the word symbols represent are not imprinted in and stored up in the speech centres themselves, but in the associated centres ("ideational" centres, as they have been termed) with which the cortical speech centres are in connexion.[11] The speech centres, auditory, visual, and kinæsthetic, seem merely to be the centres in which auditory, visual, and kinæsthetic speech symbols are received, registered, and brought into connexion with the other centres in the cerebral cortex in which the memory pictures of the objects, qualities and ideas which those speech symbols represent, are stored. Hence, if the term pictorial is applied to any form of aphasia it should not, I think, be limited to those cases in which the lesion involves the speech centres but should include those cases (if they occur) in which the lesion involves the associated ("ideational") centres—i.e., cases of aphasia which by some writers are termed supra-cortical or supra-pictorial. Though, as I have stated in the footnote, the auditory and visual speech centres are "ideational" centres—they are, however, "pictorial" centres only in a limited extent, since the memory pictures of the *ideas* which speech symbols represent are stored up in other centres. I take it that stimulation of the cell group in the auditory speech centre which corresponds to the word "sweet," for example, does not raise up in the mind the true picture or idea which the word sweet represents, unless other cortical (gustatory) centres in which those ideas are stored are brought into action.

I would suggest that the term "central" (though not altogether free from objection) is preferable to the terms cortical and pictorial, since everyone uses the terms auditory speech or word centre, visual speech or word centre, motor or kinæsthetic speech or word centre, and motor or kinæsthetic writing or graphic centre; and that we should consequently speak of central, sub-central, and supra-central word deafness, word blindness, vocal aphasia and agraphia, rather than of cortical, sub-cortical, and supra-cortical, or of pictorial, sub-pictorial, and supra-pictorial word deafness, word blindness, vocal aphasia and agraphia.[12]

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* We shall afterwards see that in *some* left-handed persons the "active" or "driving" speech centres seem to be situated in the left hemisphere of the brain and that this statement seems to apply with special frequency to the visual speech centre and the writing (speech) centre.

† The term vocal-articulative aphasia is perhaps, strictly speaking, a more correct term than vocal aphasia, but it is too long; the term vocal aphasia when used in contradistinction to the terms auditory, visual, and graphic aphasia seems to me quite sufficiently accurate for all practical purposes.

[10] I doubt whether supra-central aphasia in a complete form (granting, of course, that the patient retains full consciousness) ever occurs. There seems to be no doubt that incomplete or partial forms of supra-central auditory and supra-central visual aphasia occur, but it is doubtful whether the so-called supra-central varieties of vocal aphasia and of graphic aphasia occur, even in an incomplete and partial form, since, so far as we know, the action of the motor-vocal speech centre and of the graphic speech centre is, in most normal individuals at least, stimulated from (or through) and regulated by the auditory and visual speech centres. Complete destruction of *both* auditory speech centres in a person who was unable to read and write (i.e., whose visual speech centre was uneducated and inactive) would, so far as our present knowledge enables us to judge, produce inability to speak—i.e., would paralyse, so to speak, the action of the motor-vocal speech centre. But in such a case the lesion would not (as I understand the term) be supra-cortical or supra-pictorial. Again, everyone of course admits that complete destruction of the visual speech centre and of the fibres which connect the visual speech centre with the writing (graphic) centre will, in most persons at least, produce agraphia, but cases of this kind are not (usually) considered to be cases of supra-cortical or supra-pictorial graphic aphasia.

[11] Strictly speaking, the speech centres, certainly the sensory speech centres, are "ideational" centres, for in them the memory pictures of spoken and written word symbols which play a most important part in internal speech and thought are imprinted and stored.

[12] The objection to the term "central" is that a condition closely resembling sub-central (sub-cortical or sub-pictorial) word deafness may result (as Freund has shown) from a lesion which is situated in the end organ of hearing; and if it is admitted that cases of this description should be considered as cases of aphasia the word deafness should, or might, be termed "peripheral" word deafness, in contra-distinction to all the forms of word-deafness (central, sub-central, and supra-central, as I propose to term them), in which the lesion is situated in the central nervous system—e.g., in the cerebrum. But I very much doubt whether the cases such as Freund has described should be comprised under the term "aphasia." They should, I think, be termed cases of

INTRA-CENTRAL VARIETIES OF APHASIA.

Again, aphasic symptoms may undoubtedly result from lesions which interrupt the connexions between the different speech centres themselves; from lesions, for example, which interrupt or destroy the conducting fibres which pass from the auditory speech centre to the vocal speech centre, and from the visual speech centre to the graphic (? speech) centre. To these forms of aphasia the term "conduction" aphasia is usually applied. A better term seems to me to be "intra-central," for in some cases of sub-central (sub-cortical or sub-pictorial) and in some cases of supra-central (supra-cortical or supra-pictorial) aphasia the lesion also involves and may be limited to the conducting fibres which connect the different speech centres, with lower centres, as in the case of *sub*-central aphasias, for example.

COMMISSURAL FORMS OF APHASIA.

Further, if, as is I think probable, some of the speech centres are, in some persons at least and in some degree, bilaterally active, it is probable that, in some individuals at least (i.e., in those individuals in whom this bilateral activity is well marked), aphasic symptoms of some sort or another will result from interruption of the connecting or commissural fibres which pass between the speech centre in *one* hemisphere and the corresponding speech centre in the opposite hemisphere. The term "commissural" may be applied to these forms of aphasia. But I need not insist on this point, for, in the first place, authorities are, as I have already indicated, by no means agreed that the cortical areas in the right hemisphere (which correspond to the auditory, visual, vocal, and graphic speech centres in the left hemisphere) are possessed of active speech functions; and, in the second place, we are as yet quite ignorant of the symptoms, if any, which characterise these (commissural) forms of aphasia, even granting, as I think probable, that they do sometimes occur. I would consequently suggest the following classification and nomenclature of the different varieties of aphasia.

CLASSIFICATION OF THE APHASIAS.

- A. Sensory or receptive aphasia.
  - 1. Auditory aphasia (word deafness).
    - (*a*) Sub-central.
    - (*b*) Central.
    - (*c*) Supra-central.*
  - 2. Visual aphasia (word blindness).
    - (*a*) Sub-central.
    - (*b*) Central.
    - (*c*) Supra-central.*
- B. Motor or emissive aphasia.
  - 1. Vocal or motor-vocal aphasia.
    - (*a*) Sub-central.
    - (*b*) Central.
    - (*c*) Supra-central.*
  - 2. Agraphia (graphic aphasia).
    - (*a*) Sub-central.
    - (*b*) Central.
    - (*c*) Supra-central.*

* In my opinion it is very doubtful if these (supra-central) forms of aphasia ever occur in a complete form.

(*d*) *Intra-central* (*or conduction*) *aphasia*, due to interruption of the connexions between the sensory or motor speech centres in the same, or the sensory and motor speech centres in the opposite, hemisphere.

(*e*) *Commissural aphasia*, due to interruption or destruction of the connecting (commissural) fibres which pass between the corresponding speech centres in the two hemispheres—i.e., between the left and right auditory speech centres, the left and right visual speech centres, the left and right vocal (or glosso-kinæsthetic) speech centres and the left and right motor-writing (or cheiro-kinæsthetic) centres. As stated above, we are at present ignorant as to the nature of the symptoms, if any, which characterise these (which I term commissural) aphasias.

THE NATURE OF SPOKEN AND WRITTEN SPEECH AND OF THE CEREBRAL NERVOUS MECHANISMS CONNECTED WITH SPOKEN AND WRITTEN SPEECH.

Articulate speech.—Before proceeding further, it may perhaps be advisable to point out that spoken words merely consist of certain sound vibrations, or rather series or combinations of sound vibrations, to which definite meanings have been attached by the different races, peoples, or communities using the language or dialect to which those words belong. Spoken words are merely the auditory and vocal (sensory-motor) equivalents or symbols of the ideas which they represent. If we analyse the nervous mechanism which is more immediately concerned with articulate or vocal speech we find that on its afferent, receptive, or sensory side it consists of an intricate nervous apparatus, the function of which is—(1) to receive, and (2) to register (store up the memory images or pictures of) the sound vibrations which constitute spoken words; and (3) to bring the cell and fibre groups in which auditory speech symbols are received and in which the memory pictures of these auditory speech symbols are registered and stored, into connexion with the corresponding or associated cell groups in other parts of the cerebral cortex, in which the ideas or memory pictures of the objects and other percepts, to which those auditory speech symbols correspond, are received, registered, and stored; and on its efferent, emissive, or motor side it consists of a neuro-motor apparatus, the function of which is to produce the high intricate coördinate muscular movements which are necessary for the production of the sound vibrations, or rather series or combinations of sound vibrations, which constitute spoken words.

Written speech.—Written speech merely consists of certain graphic (visual) characters (signs), or rather combinations of graphic characters, which are the visual equivalents of auditory speech symbols. While auditory speech symbols (spoken words) directly symbolise the object percepts and other percepts—the ideas—which they represent, visual speech symbols (written words) do not directly symbolise those ideas. In most normal individuals written words are merely symbols of symbols—the visual equivalents of auditory speech symbols, which in their turn are the direct (auditory speech) equivalents of the ideas which they represent (and which written words indirectly represent). Hence it would appear that in order that visual speech symbols (written words) may be understood—i.e., in order that they may raise up in the mind the ideas which they (indirectly) represent, they must, in most normal individuals at all events, first be translated (either consciously or unconsciously) into their auditory equivalents—into auditory speech symbols (spoken words). In other words, in most normal individuals, the cell groups in the visual speech centre in which the memory pictures of visual speech symbols are stored do not appear to be in direct anatomical and physiological connexion with the cell groups in the associated ("ideational") centres in which the memory pictures of the corresponding ideas are stored. In most normal individuals the connexion seems to be an indirect one—i.e., through the auditory speech centre. We shall afterwards see that there appear to be exceptions to this general rule even in normal individuals and that in conditions of disease a direct connexion between the visual speech centre and the associated ("ideational") centres is probably frequently established; in fact, it is only by supposing that such exceptions occur that it is possible to explain some of the peculiarities in the symptoms which are met with in some cases of aphasia.

If we analyse the cerebral nerve mechanism which is more immediately concerned with written speech we find that on its afferent, receptive, or sensory side it consists of a nervous apparatus, the function of which is: (1) to receive; and (2) to register (store up the memory pictures of) the graphic (visual) characters or combinations of graphic characters which constitute written words (visual speech symbols); and (3) to bring the cell groups of the visual speech centre, in which visual speech symbols are received and stored, into connexion (*a*) with the corresponding cell groups in the auditory speech centre in which their auditory equivalents (auditory speech symbols) are received and stored (this would appear to be the usual method of connexion); or (*b*) with the corresponding cell groups in the associated (ideational) centres in which the memory pictures or ideas of the object and other percepts to which these visual speech symbols correspond are stored (this would seem to be an unusual method of connexion); and on its efferent, emissive, or motor side it consists of a neuro-muscular apparatus, the function of which is to produce the coördinate movements which are necessary for the production of the graphic or written speech characters, which, when combined in certain definite forms or series, constitute visual speech symbols or written words. In most normal individuals the action of the emissive or motor-vocal speech centre is, as we shall afterwards see, initiated or stimulated by, and to a large extent regulated and governed by, the auditory speech centre, while the action of the emissive graphic (? speech) centre is initiated or stimulated by, and (chiefly) regulated and governed by, the (sensory) visual speech centre.

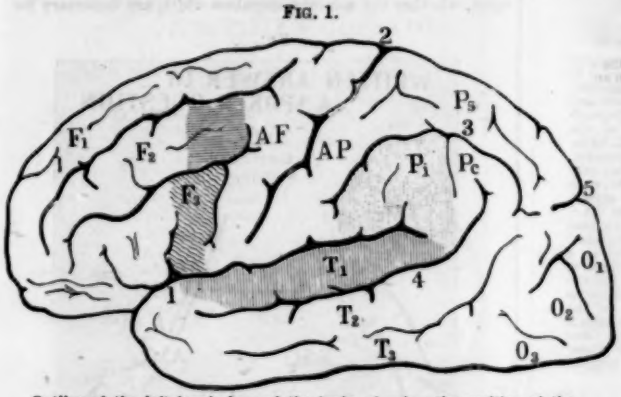
"pseudo" word-deafness. I will return to this point later. Consequently, notwithstanding this objection, the terms "central," "sub-central," and "supra-central" seem to me, for the reasons given above, to be preferable to the terms cortical, sub-cortical, and supra-cortical, pictorial, sub-pictorial, and supra-pictorial.

It is essential to remember this intimate connexion between the auditory speech centre and the vocal speech centre, on the one hand, and between the visual speech centre and the graphic (? speech) centre on the other. In every normal individual the auditory speech centre and the vocal speech centre are active and in some degree educated; every normal individual can (within the limits of his educational endowments) understand spoken language and can speak. Hence I have termed these speech centres the fundamental speech centres. Professor Wyllie terms them the "primary couple." Reading and writing are not always acquired by the normal individual; they are, so to speak, speech luxuries. Hence I have termed the visual speech centre and the associated graphic (? speech) centre the accessory speech centres. Professor Wyllie terms them the "secondary couple."

THE POSITION OF THE SPEECH CENTRES.

The auditory speech centre or auditory *word* centre, as it is often termed, is situated in the posterior part of the first, and probably also of the second, temporo-sphenoidal convolutions. The vocal speech (or word) centre is situated in the posterior end of the inferior frontal convolution (the foot and ascending portions of Broca's convolution). The visual speech (or word) centre is situated in the angular gyrus and perhaps also in the adjacent part of the supramarginal convolution. The exact position of the graphic (? speech) centre has not as yet been definitely determined. Exner has suggested that it is situated in the posterior end of the second frontal convolution and two recent cases of agraphia, to which I will afterwards refer in detail, seem to support this view. In Fig. 1 the position of the speech centres and of the lesion which causes word deafness, motor-vocal aphasia, word blindness, and agraphia is shown (after Bernard).

FIG. 1.



Outline of the left hemisphere of the brain, showing the position of the lesion in different forms of aphasia. (After Bernard.) 1. Fissure of Sylvius. 2. Fissure of Rolando. 3. Interparietal sulcus. 4. Parallel fissure. 5. External perpendicular fissure. F_1, first; F_2, second; and F_3, third frontal convolutions. AF, ascending frontal, and AP, ascending parietal convolutions. P_3, superior parietal lobule; P_1, inferior parietal lobule or angular gyrus; Pc, pli courbe. T_1, first; T_2, second; and T_3, third temporal convolutions. O_1, first; O_2, second; and O_3, third occipital convolutions. The shaded area in T_1 shows the position of the auditory speech centre. The shaded area in F_3 shows the position of the motor-vocal speech centre (Broca's centre). The shaded area in Pi shows the position of the visual speech centre. The shaded area in F_2 shows the position of the graphic speech centre.

In right-handed persons the (active) speech centres are situated in the left hemisphere and in left-handed persons in the right hemisphere of the brain. This statement certainly applies (in the great majority of instances) so far at all events as the auditory and motor-vocal speech centres are concerned. In left-handed persons who write (only) with the right hand, as most left-handed persons do, the graphic (? speech) centre is situated in the left hemisphere; probably in such persons the visual speech centre is also (usually) situated in the left hemisphere but on this point further information is required.

GENERAL SKETCH OF THE COURSE OF THE NERVOUS IMPULSES CONCERNED IN SPOKEN AND WRITTEN SPEECH.

With these preliminary remarks, let us now consider in more detail the cerebral nervous mechanisms concerned with speech and analyse the speech derangements (i.e., the aphasic symptoms) which result from lesions in different parts of these speech mechanisms. I shall limit my remarks to vocal speech (receptive and emissive) and to written speech (receptive and emissive) and, for the sake of simplicity, in the first instance will ignore the bilateral representation of the speech centres and suppose that they (the speech centres) are entirely located in one—the left—hemisphere of the brain.[13] In the educated adult the speech functions are so highly differentiated, and specialised, the speech mechanisms are so complicated and our knowledge of the physiology of the nervous actions concerned in the higher mental operations connected with internal speech and thought is so imperfect that it is impossible to describe the working of the complicated and finished mechanism in anything like detail. In the present position of our knowledge it is impossible to make any definite statement as to the exact course which the nervous impulses, with which the psychical phenomena internal speech, thought, reasoning, deliberation, &c., are associated, take in passing through the cerebral tissues. We do not know, for example, the exact course that the nervous impulses which are concerned in the production of a spoken answer to a simple spoken question, such as, "*Do you think it will rain to-day?*" take. We know that the auditory speech symbols, the sound vibrations representing the spoken words, "Do you think it will rain to-day?" which enter through the ear, cause nerve vibrations, which ultimately (for they probably first pass through a lower auditory centre or, more correctly, centres in the cerebral cortex) excite the function of the auditory speech centre (see Fig. 2). We know that the spoken answer, whatever it may happen to be, is emitted by the vocal speech centre. But we are not absolutely certain of the exact course which the nervous impulses take (*a*) in their passage from the ear to the auditory speech centre (whether they pass from the acoustic nuclei, as they may be termed, directly to the auditory speech centre, or, as I think more probable (and is diagrammatically represented in Fig. 2) indirectly through a lower auditory centre or, more correctly, two lower auditory centres in the cerebral cortex), and (*b*) in their passage from the vocal speech centre to the lips, tongue, &c. (whether they pass down directly from Broca's convolution—the vocal speech centre—to the pyramidal tract or, as I think more probable, indirectly to the pyramidal tract (as is represented in Fig. 2) through a lower motor centre or, more correctly, two lower centres in the cerebral cortex (situated in the lower end of the ascending frontal convolution) in which the ordinary movements of the lips, tongue, larynx, &c., are represented).

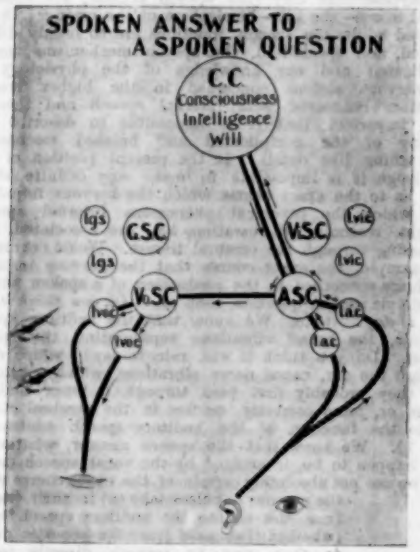
Further, we are still more ignorant of the exact course which the nervous impulses take in passing through the higher parts of the cerebral mechanisms—i.e., between their point of entrance to the auditory speech centre and their point of exit from the vocal speech centre.

The question "Do you think it will rain to-day?" after reaching, so to speak, and stimulating the auditory speech centre flows over through connecting fibres to numerous associated centres and may excite a vast series of cerebral (nervous and mental) actions. A whole string of associated memories, ideas, and impulses may be called up in the mind, a number of voluntary actions may be produced, and a number of new ingoing nervous impulses may be generated.

[13] I do not propose to discuss in detail the mechanisms concerned in (*a*) the finger-speech and lip-reading speech of deaf and dumb persons, (*b*) of the finger-reading of blind persons, or (*c*) the finger-speech of deaf-mutes who are also blind; for, although these mechanisms and their derangements are, from a theoretical point of view, of the very greatest interest, we have little or no definite information regarding the derangements in them which result from disease. It is certain, however, that aphasic symptoms must occur in a certain proportion of deaf and dumb and blind persons, who have been taught to speak, to read and to write, and it is greatly to be desired that the medical officers of deaf and dumb institutions and of blind asylums should carefully study these cases during life and minutely examine and record the brain lesions found after death—or what would be still more valuable (for the medical officers to deaf and dumb and blind asylums probably rarely have made an intimate study of aphasia) send such cases when they occur to an expert in aphasia to be examined during life, and their brains to be examined after death.

The person who is questioned may look at the sky, at the barometer, at the weather report in his daily paper, he may note the direction and velocity of the wind, the temperature of the air and its degree of moisture, and then, after getting as much information as he can from the outside, he may fall back upon and compare the information derived in this way with his own personal experience and with the information (knowledge) which he has acquired (stored up in the nerve cells of his cerebral cortex) from other persons or from books. Then, after due deliberation, a judgment or conclusion is formed, an answer is mentally determined upon, and, finally, that answer is put into concrete speech form (probably, so far as our present knowledge enables us to judge, in most persons in the auditory speech centre) and is emitted through the vocal speech centre. In order that this process of thought and reasoning may be carried out, a vast series of cerebral mechanisms and actions, throughout a large extent of the cerebral cortex (diagrammatically represented in Fig. 2 as a centre—C.C.), must be brought into play. Consciousness, Intelligence, and the Will are actively engaged, the reasoning processes are called into play, after due deliberation a judgment is formed, and an answer is determined upon. All of these psychical phenomena are, it is needless to say, associated with corresponding physical changes, with definite changes of a physical kind in nerve (cell and fibre) mechanisms in the different parts of the cerebral tissue which are engaged and brought into action. Finally, under the influence of the will, of a *fiat* of the will, as it is termed, a motor discharge, which is represented externally by the spoken answer to the question, is emitted. Even the, comparatively speaking, elementary point—the exact course which the nervous impulses take in the final stage of the process after the answer has been mentally determined upon—is as yet uncertain. We do not know, after a judgment has been formed and an answer has been mentally determined upon, whether the nervous impulses which are necessary for

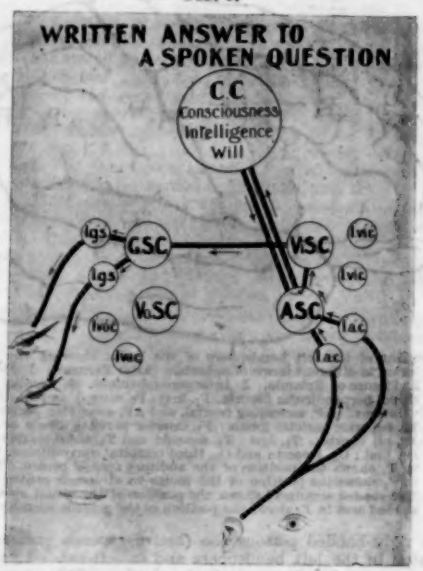
FIG. 2.



Diagrammatic representation of the course which the nervous impulses concerned in the production of a spoken answer to a spoken question take. A.S.C., auditory speech centre; l.a.c. and r.a'.c'., lower auditory centres on the left and right sides of the brain respectively. Vo.S.C., vocal speech centre; l.vo.c. and r.vo'.c'., lower vocal centres in the left and right sides of the brain respectively. C.C., hypothetical centre representing the seat of Consciousness, Intelligence, and the Will.* The nervous impulses concerned in a spoken answer to a spoken question enter, so to speak, through the ear and pass to the auditory speech centre (A.S.C.), through the lower auditory centres (l.a.c. and r.a'.c'.); from the auditory speech centre they pass to the ideational centres in different parts of the cerebral cortex, in the diagram hypothetically represented as a special centre (C.C.) the seat of Consciousness, Intelligence, and the Will. After a judgment has been formed and the answer has been determined upon, the nervous impulse passes from the higher cerebral centres (C.C.) to the auditory speech centre, where it is put into concrete speech form; from the auditory speech centre it passes to the vocal speech centre (Vo.S.C.) and thence, through the lower vocal centres (l.vo.c. and r.vo'.c'.), to the larynx, tongue, lips, &c., where it is emitted as spoken sounds.

* In the construction of diagrams illustrative of the higher cerebral and speech mechanisms it is convenient for the sake of simplicity and illustration to introduce above the recognised perceptive or sensory speech centres (auditory speech centre and visual speech centre) and above the motor (or, as Dr. Bastian terms them, kinæsthetic) speech centres (vocal speech centre and graphic speech centre) two higher centres representing on the sensory side Consciousness and Intelligence and on the motor side the Will, or one supreme centre representing Consciousness, Intelligence, and the Will; but it must be remembered that there is absolutely no reason to suppose that any such centres or centre exist as definite and distinct areas or centres in localised parts of the cerebral hemispheres; on the contrary, such a supposition seems to be altogether erroneous and in absolute contradiction with our knowledge of the working of the brain and of the construction of the nervous mechanisms the integrity of which is essential for the manifestation of the psychical phenomena which we term Consciousness, Intelligence, and the Will. All the different areas of the cerebral cortex and their connecting tracts are the physical substrata, the action of which is associated with the psychical or mental phenomena—Consciousness, Intelligence, and the Will. Each and every one of these cortical mechanisms (centres and associated tracts) forms a part of the physical substrata, the action of which is associated with the manifestation of the psychical phenomena—Consciousness, Intelligence, and Will. The cortex as a whole is the seat of Consciousness, Intelligence, and the Will. Destruction of any one of the sensory or motor (? kinæsthetic) cortical centres necessarily obliterates the memory pictures which are stored up in that centre; the Intelligence is thereby the poorer, but in other respects it may remain the same, while Consciousness and the Will are, or may be, entirely unaffected. In such circumstances, the other mechanisms of the cerebral cortex may continue to play their part, though, in consequence of the loss (obliteration) of the memory pictures which were imprinted in, and the loss of the associations which can only be carried on through, the centre which is destroyed, certain of the faculties of the mind, as an intelligent, thinking, reasoning, and volitional mechanism, must necessarily be to some extent interfered with and impaired.

FIG. 3.



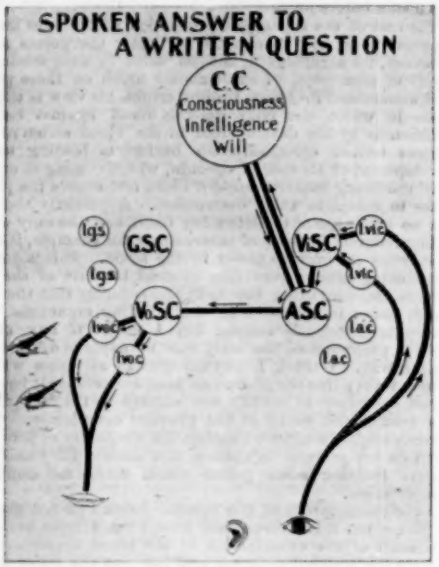
Diagrammatic representation of the course which the nervous impulses concerned in the production of a written answer to a spoken question take. A.S.C., auditory speech centre; l.a.c. and r.a'.c'. lower auditory centres. Vi.S.C., visual speech centre. G.S.C., graphic speech centre; l.g.s. and r.g'.s'., lower graphic centres on the left and right sides of the brain respectively. The spoken question passes in by the ear to the auditory speech centre (A.S.C.), ? through the lower auditory centres (l.a.c. and r.a'.c'.); from the auditory speech centre, nervous impulses pass to the higher "ideational" centres, diagrammatically represented as the centre C.C. After the answer has been determined upon the nervous impulse passes from C.C. to the auditory speech centre (A.S.C.), where it is put into concrete speech form; from the auditory speech centre (A.S.C.) it passes to the visual speech centre (Vi.S.C.), where it is translated into visual speech symbols; from the visual speech centre (Vi.S.C.) it passes to the graphic speech centre (G.S.C.), thence it is emitted through the lower graphic centres (l.g.s. and r.g'.s'.) either to the right or left hand.

the production of the discharge of the vocal speech centre (the production of the spoken answer to the question) must pass (*a*) through the auditory speech centre, in order to act upon the vocal speech centre (as is represented in Fig. 2); or (*b*) whether the higher parts of the cerebral mechanism (C.C.) in which the judgment has been formed and the answer determined upon can play directly upon the vocal speech centre (Vo.S.C.) (i.e., without acting through the auditory speech centre) as is diagrammatically represented by the dotted line which passes from C.C. to Vo.S.C. in Fig. 6.; and, if so, (*c*) what is the course which such nervous impulses take.

It would appear, so far as our present knowledge and information enable us to judge, that, in most normal individuals at all events, the action is through the auditory speech centre (see Fig. 2).[14] This, at all events, would appear to be the case so far as the names of objects and many actions and attributes are concerned. Whether the same statement applies to the other parts of speech "in which," as Broadbent puts it, "names or nouns are set in a framework," is perhaps more doubtful. Probably, as I have just stated, in ordinary circumstances—i.e., in most normal individuals at all events—the auditory speech centre is first stimulated (the answer first takes concrete (speech) shape, as Bastian has aptly termed it, in the auditory speech centre), and then under stimulation from, and under the guidance and direction of, the auditory speech centre the vocal speech centre is put into action.

Again, the answer to a spoken question may be emitted or discharged by the graphic (? speech) centre. In this case it would appear that after the answer has been mentally determined upon, it is, as in the former case, first put into concrete speech form in the auditory speech centre, from which the nervous impulses pass to the visual speech centre (Fig. 3), where they are translated into visual speech symbols; and then from the visual speech centre they pass on to and out by the graphic (? speech) centre. But there is reason to suppose that in certain circumstances (probably in some normal individuals and certainly in some cases of disease) the "ideational" centres (C.C.) can, as it were, play directly upon the visual speech centre (Vi.S.C.).

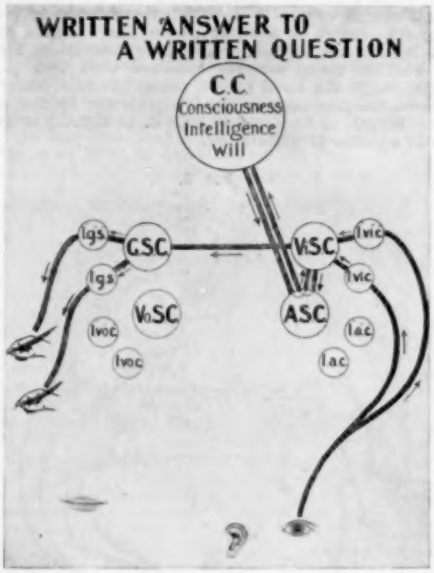
FIG. 4.



Diagrammatic representation of the course which the nervous impulses concerned in the production of a spoken answer to a written question take. The nervous impulses which enter, so to speak, through the eye pass to the lower visual centres (l.vi.c. and l'.vi'.c'.), whence they pass to the visual speech centre (Vi.S.C.); from the visual speech centre they pass to the auditory speech centre (A.S.C.) where they are translated into auditory speech symbols and brought into connexion with the "ideational" centres (C.C.); after the answer has been determined upon it passes from C.C. to the auditory speech centre (A.S.C.) where it is put into concrete speech form; from the auditory speech centre (A.S.C.) it passes to the motor vocal speech centre (Vo.S.C.) and out through the lower vocal centres (l.vo.c. and l'.vo'.c'.) to the larynx, tongue, lips, &c.

[14] That this is so seems suggested by the fact that if a young child who has learned to speak becomes quite deaf he also becomes dumb. But, on the other hand, the fact that a deaf and dumb child may be taught to talk by the method of lip-reading suggests that the vocal speech centre may be put into action (stimulated to discharge and its action governed) by the visual centre. This, or other methods of compensation explain the fact that complete destruction of the auditory speech centre on both sides of the brain does not necessarily produce complete vocal (motor) aphasia.

FIG. 5.



Diagrammatic representation of the course which the nervous impulses concerned in a written answer to a written question take. The nervous impulses which enter, so to speak, through the eye pass to the lower visual centres (l.vi.c. and l'.vi'.c'.), whence they pass to the visual speech centre (Vi.S.C.); from the visual speech centre they pass to the auditory speech centre (A.S.C.), where they are translated into auditory speech symbols and brought into connexion with the "ideational" centres (C.C.). After the answer has been determined upon it passes from the "ideational" centre (C.C.) to the auditory speech centre (A.S.C.), where it is put into concrete speech form. From the auditory speech centre it passes to the visual speech centre (Vi.S.C.), where it is translated into visual speech symbols, and from the visual speech centre (Vi.S.C.) to the graphic speech centre (G.S.C.), whence it is emitted to the lower graphic centre (l.g.s. and l'.g'.s'.) to the right or left hand respectively.

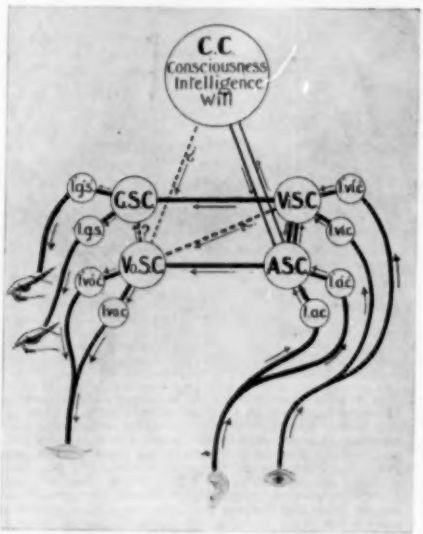
In some cases, for example, in which the auditory speech centre is inactive or destroyed the patient is still able to write spontaneously.

The same uncertainty applies to the course of the nervous impulses which are concerned in the production of a spoken and written answer to a written question. We know that the written question which enters, as it were, through the eye, passes to the half vision centres (in the occipital lobes) and ultimately reaches the visual speech centre (in the left angular gyrus); and that the answer, whatever it is, which is mentally determined upon, may be emitted, either (*a*) in the form of written speech—that is to say, through the graphic (? speech) centre, or (*b*) in the form of spoken speech—that is to say, through the vocal speech centre.

It seems probable, so far as our present knowledge enables us to judge, that in most normal individuals, after the written question has reached the visual speech centre it flows over, as it were, to the auditory speech centre (as is represented in Figs. 4 and 5), where it is translated from visual into auditory speech symbols; in other words, that in order to reach the higher cerebral centres (C.C.) (which must be brought into action in order that the question may be fully realised in consciousness and a judgment

formed regarding it), the nervous impulses (in most normal individuals and in ordinary circumstances, at all events) pass to and through the auditory speech centre. Further, it seems probable, so far as our present knowledge enables us to judge, that (in most normal individuals and in ordinary circumstances at least) the emissive impulses (after the answer has been decided upon) first pass to the auditory speech centre (where they are, as it were, first put into concrete speech in the form of auditory speech symbols), and then flow to the visual speech centre, where they are translated into visual speech symbols, from which they pass to the graphic (? speech) centre, from which they are emitted (see Figs. 4 and 5). But whether the passage from the visual speech centre to the emissive writing or graphic (? speech) centre is a direct passage, as I believe and as Dr. Bastian has argued (and as is represented in Fig. 5), or whether these emissive impulses must first pass to and through the vocal speech centre (Broca's centre), as many authorities suppose (as is represented by the dotted lines (Vi.S.C. to Vo.S.C. and Vo.S.C. to G.S.C.) in Fig 6), is still a matter of uncertainty.

FIG. 6.



Diagrammatic representation of the course taken by the nervous impulses concerned in the production of (1) a spoken answer to a spoken question; (2) a written answer to a spoken question; (3) a spoken answer to a written question; and (4) a written answer to a written question. The meaning of the letters and centres has been explained under Figs. 2, 3, 4, and 5.

That the course of the nervous impulses concerned in the complicated cerebral processes to which I have just referred is such as I have described is chiefly based upon evidence derived from two sources—viz.: (1) the clinical and pathological observation of cases of aphasia; and (2) the study of the order and manner in which the speech faculties are trained and developed in the normal child.

It is important to remember that the derangements of speech and intellectual language included under the term aphasia are degradations of the speech functions produced by disease. In other words, they are the result of a process of dissolution, whereas the development and training of the speech mechanisms and functions are the result of a process of evolution, and that by contrasting the different forms of speech derangements which result from disease with the different stages of speech development in the normal child our knowledge of the pathological physiology, as I term it, of aphasia is greatly assisted. Further, from a study of the development of speech in the young child we see the manner in which aphasic cases should be treated, the manner in which the speech mechanism and speech faculties after they have been destroyed or deranged by the process of dissolution produced by disease should be re-educated and re-acquired.

PROFESSOR A. E. WRIGHT'S METHOD OF TREATING TUBERCULOSIS.

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I REGRET that I was not able to be present at the meeting of the Royal Medical and Chirurgical Society at which Professor A. E. Wright's paper on the treatment of tuberculosis was discussed, but as he and his colleagues have drawn some far-reaching clinical deductions from their work I should like to indicate how the matter strikes me from the standpoint of the practising surgeon. Whatever view we may take of the position which tuberculin should occupy in the treatment of local tuberculoses I think we must all agree that Professor Wright has done a piece of fine, original, scientific work and that he has apparently indicated an important guide in our combat with infective diseases in the shape of what he terms the "opsonic index." But we must remember that, though from time to time Professor Wright speaks of his conclusions as new facts, we are really not dealing with facts but with theories—with excellent working hypotheses, no doubt, but still with theories—which are certain to undergo considerable modification as the investigation goes on and experience accumulates. Hence we must proceed cautiously when we come to translate these theories into practice and we must not violently throw over all our past clinical experience in favour of views which will almost certainly require modification and expansion before long.

The root of the matter is the question of opsonins and the opsonic index, and as regards the latter the points are its accuracy, its significance, and its value in determining the effect of treatment. I shall merely touch on these points. If I understand Professor Wright aright his view is that the mode in which the body defends itself against bacteric invasion is by the development in the blood serum of substances termed opsonins, each bacterium leading to the development of its special opsonin, which coming in contact with the living bacteria weaken them and enable the phagocytes to complete their destruction. Apparently the body has no other means of defending itself and the only way of aiding recovery in cases of tuberculosis, for example, is to try to increase the opsonic power in the blood. This is done by introducing minute quantities of dead bacteria of the same kind as those invading the body and securing that the blood serum comes in contact with the invading organisms. The theory is deliciously simple, but I doubt if any of the minute processes of the body can be explained in such a simple way. I think I may say that in all cases where a simple theory like the above has been enunciated it has been found necessary to modify and enlarge it till the matter has been found to be of the greatest complexity. Many reasons might be adduced against the simplicity of this view, but I do not propose to discuss this matter fully and shall merely indicate some points which make me doubt its completeness.

As to the accuracy of the opsonic index I do not presume to judge, but it has struck me from what I have seen that the result of the examination of the blood depends a good deal on the personal equation and has not the strict mathematical accuracy that one could desire. Individuals will differ in the way in which they will prepare the dilutions, more especially of the bacilli, and so on. Nevertheless, judging from the reports there is a remarkable correspondence in the results obtained by different observers. The chief difficulty seems to be in the cumbersomeness of the method which puts it outside the power of the busy practitioner and if this method is to hold its own—which may or may not be the case—the various clinical laboratories would need to make arrangements for examining and reporting on specimens of blood sent to them, and at moderate rates.

When we come to the significance of the opsonic index I confess to being somewhat puzzled by the statements of different observers and I begin to doubt whether Professor Wright's views really express the whole truth in the matter. Apparently a distinction arises between the results which are obtained in cases of strictly localised tubercle, such as lupus, and in the more generalised and acute forms and it has evidently required considerable ingenuity to devise theories

which will reconcile these results. So far as I gather, Professor Wright and his colleagues apparently look on a tuberculo-opsonic index which is distinctly below the normal standard (spoken of as 1) as indicating tuberculosis, or at any rate a condition in which the patient is very liable to become tuberculous; and if this were always the case one would have little hesitation in accepting this view. Apparently, however, there are many exceptions. For example, Dr. W. Bulloch found in the case of lupus that no less than 25 per cent. were above the lower normal limit of 0·8, and something like 10 per cent. were at or above the normal standard of healthy people—namely, 1. No doubt a number of these cases had been under treatment in various ways and the treatment may have modified the index, but 25 per cent. is a very large proportion of exceptions to a law and raises my suspicion that this law does not express the whole truth. Again, in chronic phthisis 10 out of 25 showed an index at or above 0·8, as stated by Dr. D. Lawson and Dr. I. S. Stewart, while Dr. G. W. Ross states that in 100 cases in the wards of Victoria Park Hospital—presumably many of them tuberculous cases—51 had an index above 1·2, 38 between 0·8 and 1·2, and only 11 below. Apparently in chronic cases of tuberculosis the index is as a rule below normal, while in the more acute cases the index, though fluctuating, is often above the normal. Hence the conclusion is drawn that a tuberculo opsonic index either below or above the normal—that is, below 0·8 or above 1·2=indicates tuberculosis. Surely here we have a straining of theory to meet the facts. Professor Wright apparently explains the high index in the more acute cases by supposing that it is due to auto-intoxication and as these patients do not do well he looks upon these inoculations as being badly adjusted and interspaced. But what puzzles me is that Professor Wright at the commencement of his paper showed that too large or too frequently repeated doses of tuberculin lead to a cumulative effect in the direction of the negative phase, and I should have expected that in these acute cases, where presumably on the view of auto-inoculation the doses were excessive, or at any rate too frequently repeated, an extreme negative phase would have been induced and the opsonic index would have stood far below the normal. And where in these cases the contrary was the case one would have expected them to show marked improvement in correspondence with the high index. It seems to me that something is wanting in the theory to account for these discrepancies.

Professor Wright also states that "We are, I think, warranted in conceiving of the low opsonic power which is found in association with strictly localised infections as a condition which dates back to a period anterior to infection." Of this statement I cannot find any proof and I note that one at least of his colleagues disagrees with him. It may be correct, but it is also possible that this low opsonic index is only found when infection is present and that it is the existence of the local lesion which keeps down the index. We must remember that bacteria produce substances which are deleterious to the body and which presumably in that way aid their own spread, and it may be the absorption of these products which affects the opsonic index. Professor Wright points out that even after imperfect surgical operations the index alters and he apparently thinks that this means that during the operation bacilli have been forced into the blood stream; in other words, the patient has had a dose of tuberculin and that this has affected the index. May the explanation not, however, be that the rise of the opsonic index after these surgical operations was due to the removal of the greater part, at any rate, of the substances which were entering the blood and depressing the index? And may it not be that the rise of the index during the course of the disease does not imply an auto-inoculation, as Professor Wright assumes, but a cessation of the production or absorption of the products of the bacilli which have been producing the low index? This matter does not appear to me one of any special importance apart from the statement with regard to the effect of surgical operations. But it further illustrates the difficulties in connexion with the opsonic index theory in its present condition.

The next point to which I would refer is the value of tuberculin in tuberculous disease. I have from the very first looked on tuberculin, even the old tuberculin, as a valuable adjunct in the treatment of tuberculosis, and in former years I had cases—few, it is true—where patients have remained well after a prolonged course of treatment. And the conclusion which I came to at that time was that while in surgical cases where other and safer means were at hand for dealing with the disease the sphere of tuberculin was somewhat restricted, yet in cases which were not amenable to surgical treatment it still remained a valuable adjunct. It has always been a matter of great surprise to me to notice the way in which the treatment was suddenly thrown on one side simply because it did not come up to the expectations which had been formed of it and because in some cases the results were disastrous. I have always felt that if I had been a physician I should have continued to work with tuberculin, feeling that thorough investigation as to the best method of using it would have overcome many of the objections. Hence I am delighted to find that the result of Professor Wright's work is to testify to the excellence of Koch's discovery, and that as the result of the former's method of administering tuberculin Koch's discovery may be replaced on its proper footing. At the same time, assuming that Professor Wright's theory is complete and that the effect is due to raising the opsonic index, I do not know that I feel altogether satisfied that in tuberculin we have an absolutely perfect means of doing so. Nor do I see sufficient proof to enable us to say that if only the opsonic index can be kept up the bacilli will ultimately disappear and the patient be cured. Indeed, the presence of a normal index does not seem at all inconsistent with the growth of the bacilli. That tuberculin is the best means at our hand at present I am quite willing to admit but that other means may before long be discovered is, I think, highly probable. In any case my feeling is that it is not sufficiently certain to produce a cure to warrant us in disregarding and throwing aside other methods of treatment which have up to now given fairly satisfactory results.

In former papers Professor Wright has pointed out the importance of a flow of lymph through the focus of an infective inflammation, especially in connexion with abscess and tuberculous peritonitis, and long ago I suggested exactly the same explanation of the improvement which followed surgical treatment in those cases. It was one of the early clinical facts pointed out by Lord Lister when he began to work at antiseptic surgery that if a well-formed acute abscess be opened and drained by means of a drainage-tube, and if every care be taken to prevent fresh infection from without, suppuration at once ceases. On the following day the discharge will be found to have been copious, but to be essentially serous, and the cavity rapidly closes without further suppuration. The explanation which I gave was that after the opening of the abscess large quantities of serum oozed through the granulation tissue in which the bacteria were situated and that this serum contained antibacterial substances which killed, or at any rate weakened, the cocci to such an extent that they could not resist the destructive action of the tissues or phagocytes. Professor Wright has given the same explanation practically in the same words. But I have always doubted whether this was really the whole explanation. For example, if the incision be made at an early period when suppuration is only beginning pus formation does not cease as it does when the abscess has been, so to speak, well formed. This may be because at the early period sufficient antibacterial substances have not yet accumulated in the serum of the blood. But, on the other hand, that may not be the whole explanation and it raises the question in my mind whether besides phagocytosis there are not other local factors which take an important part in the destruction of bacteria and which are not ready to take up this function if incisions are made at too early a period of the inflammation.

Similarly the effect of merely opening the abdomen in cases of tuberculous peritonitis is in some cases very remarkable, and although physicians have of late thrown doubts on the value of surgical interference in these cases I think that most surgeons who have had experience of them will not share that view. The only explanation which I could think of for the improvement after simple opening and closure of the abdomen was that serum containing antibacterial substances was poured out after the operation and interfered with the vitality of the tubercle bacilli. But here again I can hardly believe in my own explanation. Improvement is seen in those cases where the abdomen is full of nodules and where the amount of serum which would be presumably poured out as the result of the comparatively slight surgical operation must be so small that one can hardly believe that it has soaked into the interior of these nodules and injured the bacilli which are contained in them. And again we have the clinical fact that aspiration in cases

of tuberculous peritonitis, where a large quantity of ascitic fluid is present, does not have the same beneficial effect as a simple incision, even although in the latter case no subsequent drainage is employed. And here again, as in acute abscess, we find that if the operation is performed early in the case we do not have the same good results as if it is done at a later period. And, just as I doubt my own explanation, I confess again that I do not feel that Professor Wright's views represent the final and complete solution of the mode in which the invasion of bacteria is opposed by the body. My own feeling is that leucocytes and opsonins are not the only defensive agents of the body and that other factors, as yet unknown, are also of great importance. As regards leucocytes we know that in tubercles the bacilli are present in the giant and epithelioid cells and it is quite useless to look for them among the leucocytes.

A third statement made by Professor Wright must also be touched on as he draws extremely important and far-reaching conclusions from it as regards treatment on the assumption that his theory is a fact. He explains the persistence of local infections by supposing that the lymph finds difficulty in gaining access to the whole of the tuberculous deposit and that the antibacterial substances in it may be used up at the outer part of the focus, while the interior is not subjected to their influence. He further assumes that in localised infections there is deficient circulation, especially of lymph, and then he draws the deduction that, as part of the treatment, means must be taken to increase the flow of blood and lymph through the part. Now this view that there is deficient circulation of blood and lymph in localised infections is more or less an assumption and I should doubt if it were quite accurate in many instances. And especially in the case of tuberculosis, so long as we have to deal with isolated tubercles, and so long as a mass has not formed which is undergoing caseation in the centre, I should think there would be no difficulty in serum soaking through the tubercle without any artificial aid. Here I believe that the persistence of the local deposits depends as much on the weapons wielded by the bacteria as on the absence of antibacterial substances on the part of the body. Let us consider for a moment the question of the dosage of bacteria, which I demonstrated as an important scientific fact a good many years ago. In some instances I found that one or a few bacteria would suffice to infect the animal and as a rule in these cases the bacteria flourish in the blood stream rather than in the tissues. In others, again, I found that bacteria could not establish themselves in the body unless a large number were introduced at one part. The explanation which I gave of this was that the bacteria have weapons as well as the body and that these weapons are not confined to the protoplasm of the bacteria but are poured into the surrounding tissues, lower their vitality, and enable the organisms to establish themselves, so that, where the body is not particularly susceptible, a large number of bacteria must act together in order to obtain a footing. And I believe that the persistence of a local deposit is not due in all, or indeed in many, cases to difficulty of entrance of the body fluids but to other causes, among which may be mentioned the number of bacteria and their products in the deposit, and I very much doubt if attempts to increase the activity of the circulation, even if loaded with opsonins, in these parts are at all wise from a clinical point of view.

In connexion with this matter Professor Wright states that "the infecting organisms cultivate themselves in the organism in every case in a region of lower bacterio-tropic pressure—that is, in a region where the anti-bacterial substances are either absent or, at any rate, greatly reduced in amount as compared with what is found in the circulating blood." This view is very difficult to reconcile with what we know as to the seat of tuberculous lesions. We can hardly imagine that before a tuberculous lesion is established there are parts in the body in which the serum and the circulating blood lose their opsonins, and therefore it is difficult to assume that it is the absence of opsonins in a particular part that enables the bacteria to establish themselves there. As a matter of fact, as regards tubercle, the disease very often establishes itself in parts which are particularly highly vascularised. For example, in bone tubercle the favourite seat is the neighbourhood of the epiphyseal line where, as a matter of fact, the vascularity is greatest; and in lupus the favourite seat is the nose and face where also there is very marked vascularity. Then, again, apart from vascularity of the part, other local reasons must exist to explain why tubercle chooses one part rather than another—e.g., Why is hip-joint disease so very much more common than disease of the shoulder-joint, and so on? Hence I should say that there are clearly local factors quite apart from the absence of opsonin at work in the establishment of the tuberculous focus and I see no reason why these local factors may not continue at work in maintaining the existence of that focus.

To sum up, the whole of these considerations incline me to doubt whether in opsonins and phagocytes we have the whole defensive armamentarium of the body against tubercle bacilli and whether there are not many other factors, especially local factors, which are of importance, and perhaps of equal value, in connexion with the maintenance and spread of the disease. And hence my doubt whether it is wise in connexion with the treatment to devote our whole attention to one point—namely, the raising of the opsonic index, and to neglect other points which may be also of essential importance. I shall not, however, discuss the scientific aspects of Professor Wright's paper any further but will now come to the clinical application of his theories. It seems to me that Professor Wright has not been fortunate in his clinical experience, especially as regards the value of surgery in the treatment of tuberculosis. And more especially when he speaks of the results of radical operations I doubt if the cases he quotes could be classed as really radical.

In the first place, he makes the statement that strictly "localised infections do not tend to get well. They are characterised by an altogether indefinite duration." Now this statement is quite inaccurate. It is true with regard to lupus that even under the very best hygienic treatment without some surgical or medical interference there is very little tendency for the disease to cease; but even in lupus patches disappear without treatment, although no doubt extremely rarely, and one not uncommonly sees that the centre of a patch of lupus has healed while the disease is still spreading at the periphery. But lupus stands practically by itself among the localised tuberculous infections in its tendency to persist. I think I may say that in the case of every other localised tuberculous infection the disease has a strong tendency to get well even without operative treatment, if the patient is placed under suitable conditions. We know perfectly well that glands in the neck, diseases of joints, diseases of bones, diseases of the spine, tuberculous peritonitis, &c., will often recover apparently completely under suitable treatment; at any rate, as completely as the cases described by Professor Wright and his colleagues as the result of tuberculin treatment. And therefore I can only look on the use of tuberculin as an additional weapon in our hands; one, I believe, of the very greatest value when properly administered, but not as a substitute for well-established lines of treatment.

Another point to which I may refer is Professor Wright's view as to the surgeon's attitude to local tuberculosis. Apparently, in his opinion, the surgeon has no other thought in the treatment of these cases than extirpation and the application of antiseptics. Professor Wright says: "I would, in view of this new asset in medicine, fain induce the surgeon to abate something from his conviction that extirpation and the application of antiseptics offer, in connexion with bacterial infections, the only possible means of cure." This is quite a grotesque exaggeration. For, as a matter of fact, it is only in a comparatively small proportion of cases of localised tuberculosis that the surgeon resorts to operative means. It is not every case of glands in the neck, for example, which comes to a surgeon which is treated by extirpation. Certain cases evidently require operation; for example, those where the glands are breaking down and where pus is forming. But a very considerable number of cases of enlarged glands in the neck, which are in all probability tuberculous, are treated by the surgeon by other methods, especially by hygienic measures, before any operative interference is advised. This is still more the case in connexion with diseases of bones and joints. The surgeon does not forthwith proceed to operate on a tuberculous joint nor does he consider that operation offers the only means of cure. It is only when he finds that the tuberculous disease resists other methods of treatment and where the case is going down-hill that he feels it necessary to interfere. And just as the surgeon knows that there are other methods of treatment besides operation, so I think it is well for the pathologists to bear in mind that there are other methods of

dealing with tuberculosis besides treatment by tuberculin, and if they blindly pursue the course of treating patients by tuberculin as the *only* method of treatment they will throw away many weapons which otherwise would be of advantage in dealing with the disease. Besides, if I may mention another clinical point, the object of surgical operations in tuberculosis is not always to remove the infected area and to extirpate the infection. There are various other considerations which have to be borne in mind in treating a case besides the removal of the disease. The situation of the disease may lead to consequences which may require treatment apart from its mere cure; and I hope that Professor Wright's view that the surgeon is not to be called in till tuberculin has failed will not become a generally accepted one, otherwise we shall have very curious results as regards deformities and other troubles which ought not to occur if one bears in mind the fact that the treatment of the disease by raising the opsonic index is not the only point to be considered.

With the view of assisting the action of tuberculin Professor Wright lays the greatest stress on the importance of increasing the flow of lymph through the affected part. I think that treatment directed in this way must be done with the greatest judgment. Professor Wright assumes quite wrongly that when a tuberculous sinus shows signs of drying up it means that it is not going to heal. Exactly the opposite is the case. As long as a tuberculous sinus is actively discharging, so long we know that for some reason or other the tuberculous process is active; but as the tuberculous disease becomes less active the sinus tends to dry up and in the course of time—very possibly it may be some months—provided no mixed infection occurs in the interim, the sinus will usually close. When Professor Wright leaves the question of tuberculin treatment and advises the employment of methods which increase the flow of lymph in various tuberculous lesions he is courting disaster. In such cases as psoas abscess, for example, the risk of sepsis will be increased and we know that the probability of recovery in cases of tuberculosis is very much greater where we have to do with a simple than with a mixed infection. I fear that if the surgeon employs substances which will produce a flow of lymph through the sinus he will very likely end by having a mixed instead of a single infection and then he will find that his tuberculin has much less curative power than it otherwise would have had. Similarly with the question of massage, movements, &c., in promoting the flow of lymph through a tuberculous focus. We already know by ample experience that movement and massage are methods of treatment which are very likely to lead to serious exacerbation of the symptoms and increased activity of the disease. Even after the opsonic index has been reinforced by tuberculin injections the greatest care should, I think, be exercised in the employment of these measures.

Then, again, Professor Wright states that "it is one of the cherished beliefs of the surgeon that it is possible to extirpate completely and effectively by the knife in the large proportion of the cases in which he has to deal, the invading micro-organisms. I for my part find it very difficult indeed to believe that this result can often be achieved even by the most radical operations." This clinical observation is apparently based on operations in which the chief method of extirpation employed was scraping. I have for years inveighed against classing any operation in which scraping of a tuberculous lesion was employed as a radical operation. I quite admit that one cannot cure tuberculosis by radical operation, but clinical experience shows that in a large majority of suitable cases one can get rid of the particular local deposit by operation. I believe that a patient who has tuberculosis, say in a joint, has in all probability a deposit elsewhere in the body—in the bronchial glands it may be—which is unaffected by the operation on the local affection. But undoubtedly the operation on the local infection will in many cases, if really radically performed, cure that lesion. To amputate a limb well above the seat of a tuberculous lesion will surely be admitted to be an effective, though no doubt a very severe, method of getting rid of the disease. But many less drastic operations for the removal of the disease, if only one cuts sufficiently widely, are equally effective.

Take, for example, the case of glands in the neck to which Professor Wright especially refers. To scrape out glands in the neck may occasionally succeed, but in the great majority of cases it is an absolutely futile method of procedure. And even when it comes to excision I am afraid that many of the so-called radical operations on tuberculous glands simply consist in removing the glands which are visibly infected. Now that is not my idea of a radical operation for glands in the neck. It is quite certain that the infection extends beyond glands which are visibly enlarged and if only the latter are removed the condition is very prone to reappear. And therefore I have always advocated an elaborate operation in cases of tuberculous glands in the neck, consisting not only in the removal of all infected glands but of all the *fat and other glands* in the neighbourhood over an extensive area. I believe it is advisable to remove the fat because we know that after the removal of glands the fat lobules very often develop lymphatic tissue and fresh glands are produced, and the very fact that in Professor Wright's experience recurrence has taken place at the seat of operation at once shows that the operation was not radical. I have had many cases of glands in the neck where a single operation has put a stop to the condition and where no recurrence whatever has taken place. But I frankly admit that in a good many cases recurrence has taken place but very seldom in the area of the operation. If the operation is performed as I pointed out above there is nothing for recurrence to take place in. Not only are all the glands, normal and infected, removed but the fat lobules, which might subsequently develop glandular tissue, are also taken away, and where recurrence has taken place it has been in other parts of the neck and simply implies that the operation has not been sufficiently extensive. For example, after operation on the anterior triangle the patient may come again with glands in the submaxillary triangle or beneath the chin or towards the lower part of the posterior triangle, but it is not my experience that the patient comes back with glands in the anterior triangle on which I have already operated and, as I say, in many cases where the operation has been thoroughly performed the patient has no further glandular trouble.

The same holds good with regard to other conditions. I do not know that there is anything more satisfactory than the excision of a small patch of lupus. If only the patch is quite small and the excision is carried out comparatively freely there may be no further appearance of the disease. I maintain that in certain bacterial diseases, more especially tuberculosis, the disease can be got rid of, as regards its local manifestations at any rate, by suitable operation, and even much more acute affections, such as anthrax pustules, cancrum oris, &c., can often be effectually treated by surgical means and in them I would not advise trusting solely to attempts to raise the opsonic index. Even in bad pyogenic affections, such as carbuncle, I think that surgical treatment should be combined with Professor Wright's inoculations.

One other point which I note and which has made me doubt whether tuberculin, although an extremely valuable remedy, is the final and best result which will ever be obtained in the treatment of tuberculosis, is the fact that in spite of long-continued use of tuberculin and marked improvement in the patients, Professor Wright and his colleagues admit that tubercle bacilli may still be present in the urine on one hand in cases of urinary tuberculosis, in the sputum in cases of pulmonary tuberculosis, &c., after a long period of treatment; and they also refer to recurrences taking place after the sores have healed in cases of tuberculosis on the surface of the body. Hence I do not feel that, as regards this question of recurrence and the eradication of the disease, we can absolutely depend on tuberculin.

I have, of course, nothing like Professor Wright's experience of tuberculin as employed by his method of dosage, but I have had several cases treated in this way, cases chiefly of bone and joint tuberculosis and of genito-urinary tuberculosis, and I must confess that I have not seen such remarkable improvement as Professor Wright's statements would lead one to expect. My view as regards the position of tuberculin in the treatment of tuberculosis is that it is a most valuable adjunct to our treatment. But I am not prepared to abandon surgical measures when they are necessary. Even in the case of glands in the neck I believe that cases which, apart from tuberculin, I would have operated on up to now still ought to be operated on. Glands which are breaking down, where pus is present, where ulceration has taken place, and so forth, are much better removed by a radical operation, and then by all means let the treatment be followed up by the use of tuberculin on Professor Wright's principle of dosage. Similarly in joint and bone diseases, where no operation would formerly or now have been considered necessary, by all means add the use of tuberculin to the other methods employed. But blindly to convert the

practitioner into "an immunisator," as Professor Wright puts it, is, I believe, a totally retrograde step. I feel sure that unless care is taken, and if the same enthusiasm which animates Professor Wright, and which animated many of us in the days of the old tuberculin, is again excited, the result will be disappointment and very possibly again the throwing over of a most useful remedy in the treatment of tuberculosis. It is for this reason that I have thought it well to enter a protest against extravaganoe in views and the rash throwing away of many years of careful clinical observation and experience.

Harley-street, W.

A MEDLEY OF SURGERY.

BY PROFESSOR E. E. GOLDMANN.

(*Concluded from p. 24.*)

CONSERVATIVE OPERATIONS FOR MALIGNANT GROWTHS OF LONG BONES.

JUDGING from various publications following upon Mikulicz's paper of 1895 it appears that our view as regards the operative treatment of malignant growths of long bones has undergone a change. Whereas it has hitherto been generally accepted that especially in cases of periosteal sarcoma amputation or removal of the whole of the diseased bone is indicated, we now consider conservative treatment, consisting in excision of the tumour only, justifiable, and more so when an early stage of the growth is diagnosed. The x rays have made such an early diagnosis almost the rule. There can be no doubt that Mikulicz was right when he maintained that patients suffering from such malignant growths, which as a rule give rise to little or no discomfort at all, will sooner undergo conservative treatment than sacrifice a limb. He is also right in saying that an early excision is more beneficial to the patient than a late amputation. Wherever the growth has produced secondary deposits, either in the bone itself or in the body, amputation gives no better results than excision. I am able to report on two cases of periosteal sarcoma of the tibia which I excised in 1900; both cases are doing well and show no signs of recurrence. The operative methods I used have, as far as I can see, been first applied by myself for malignant growths of the tibia. In my first case, that of a boy, aged 16 years, the growth was situated in the upper and middle thirds of the tibia. Without injuring the tumour or the periosteum of the tibia I excised a piece of the bone measuring about 30 centimetres. The stability of the limb was restored by a slight modification of a method which has been first described by Hahn in 1885. After dividing the fibula immediately below its head I placed its pointed peripheral end into a bore-hole made in the upper epiphysis of the divided tibia. Ten weeks after the operation the fibula had become so firm in its new position that the patient was able to support the full weight of his body on the operated limb.

The accompanying radiographs (Figs. 11, 12, and 13) show the condition of the fibula in intervals of months and years after the operation. Now the functional hypertrophy of the fibula has reached such dimensions that the fibula is almost as thick as the tibia of the other and healthy side. Similar instances of functional hypertrophy of the fibula have been recorded where the same method has been applied for extensive necrosis or traumatic defects of the tibia. It has been suggested to suture the lower end of the tibia to the transposed fibula but the radiographs of my case show that this procedure is unnecessary as the retraction of the interosseous membrane produces in itself the juxtaposition of the bones required.

In my second case the tumour invaded the lower two-thirds of the tibia. In order to save the limb I removed a section of the fibula measuring almost the length of the excised part of the tibia. Now the tibial and fibular ends of the divided bone were respectively joined to one another by wire sutures. Complete recovery set in in five weeks and after five months the muscles, which at first were too long for the shortened limb, had adapted themselves to their altered function so perfectly that hardly any difference existed between the calf on the operated and the normal side. Such and similar operative methods which are well known to all of you enable the surgeon to save a limb even in cases where removal of almost the whole of a long bone is indicated. I only wish to refer to a case demonstrated to the German Congress of Surgeons in which the whole of the humerus was removed and the forearm fixed to the shoulder, the function of the hand thus being saved to the female patient who earned her living by needlework.

LIGATION OF LARGE VEINS.

It is an extraordinary fact that in spite of the rapid advance of operative surgery within the last decade modern surgeons should have paid so little attention to research bearing on collateral circulation. Two important treatises on the subject have been published quite recently by Bier and Katzenstein. As yet research has almost exclusively been restricted to the various forms of collateral circulation following ligation of arteries. When we consider how long it took for surgeons to make up their minds to tie veins, especially the larger veins, of the body we understand more fully the apathy of surgeons towards the question of venous collateral circulation. Apart from the theoretical side of the question it is one of great practical importance as the domain of surgery has become wider and wider. In dealing with the radical cure of malignant growths the field of operation has become so extended that even the largest veins of the human body are brought under the surgeon's knife. The great advance in renal surgery has brought the vena cava and the question of its ligation into greater prominence. Scattered through literature we find several cases recorded in which the surgeon had accidentally injured the vein, tying it in one, suturing the wound of the vessel in the other, and merely using forcipressure again in another. Such cases have multiplied within the last two years, so that the time has arrived to consider more seriously how we should act when the nature of the operation necessitates injury of the vena cava. Anatomical, physiological, and pathological facts, as well as the results obtained by ligation of the vena cava in the human being, all prove that ligation is a legitimate procedure provided the ligature is placed below the influx of the renal veins. As in Bottini's, Zoege-Manteufel's, Heresco's, and Albarran's cases, I saw no evil consequences following the ligation of the vein which was necessitated by the excision of a tuberculous pyonephrotic kidney involving the vena cava. A few plates prepared in the following manner may demonstrate the vessels which establish collateral circulation. In a fœtus I excised three centimetres of the vena cava, injected an emulsion of bismuthum and oil from a femoral vein and then radiographed successive phases of the injected specimen. As you see the pre-vertebral and inter-vertebral veins are the first to restore circulation.

It is an important fact first recorded by Israel that clinical symptoms may be absolutely absent in cases where the vena cava is involved or even obstructed by a diseased kidney. Therefore, it is necessary for the surgeon before excising a kidney to be prepared for a lesion of the vena cava. Although we should always give the retroperitoneal method the preference, yet whenever difficulties arise in treating the pedicle of the diseased organ the peritoneal cavity should be opened and the exact relation of the kidney to the vena cava should be determined ere the kidney is removed.

Ligation of the jugular, axillary, and even subclavian veins has been, and is being, so frequently performed that any further reference to such operations is unnecessary. Even simultaneous ligation of both common jugular veins remains without untoward consequences.

In a case of intrathoracic tuberculous goitre and another of secondary epipleural abscess following costal caries I have been obliged to tie the innominate vein; both operations were successful and no circulatory trouble ensued. My most remarkable experience has been the following. The patient was a woman, aged 34 years, who was suffering from chronic miliary tuberculosis. I traced its origin to a suppurating lymphatic gland which had invaded the bulb of the jugular vein. In excising the gland copious hæmorrhage resulted from a wound of the vein. Suture and lateral ligature were ineffective. Only after tying the common jugular, the subclavian, and innominate veins was I able to arrest the bleeding. Not the slightest circulatory trouble resulted. Two exactly similar operations have been recently published, with the same result even months after the operation. No abnormal veins were seen; circulation righted itself at once. It is a fact known to pathologists that even simultaneous thrombosis of the superior and inferior vena cava may leave the circulation unimpaired.

Anatomists such as Cruveilhier, Sappey, Poirier, and

others have long ago observed that the venous system is a widespread network of anastomosing vessels which enable speedy restoration after disturbances resulting from obliteration or even destruction of the larger veins and yet there is a marked difference between the surface veins and those of the abdominal viscera. It is a fact only too well known to the operator that trouble arising in the portal vein, any one of its roots, or even one of its branches, results in circumscribed or complete gangrene of the affected organ, although there are a large number of anastomosing vessels between them. I therefore maintain that it is essential to distinguish between veins which serve as conductors of blood only and between those which have nutritive functions as well. It has only been my intention to dwell upon the practical side of the question. Those of you who are interested in its theoretical bearing I must refer to a paper of mine which will be found in the October number of the *Beiträge zur Chirurgie*. (Fig. 14.)

FIG. 11.

Sarcoma of the tibia. After excision of the growth implantation of the fibula in the upper segment of the tibia.

FIG. 12.

Functional hypertrophy of the implanted fibula in the intervals of one and two years after the operation.

FIG. 13.

TREATMENT OF IRREDUCIBLE DISLOCATIONS OF THE HIP.

Considering the great progress achieved in the bloodless treatment of congenital dislocation of the hip it seems a paradox that in cases of irreducible or inveterate dislocations of the hip operative treatment is being given the preference, although all surgeons admit that the operation is a severe one and one which in many cases has cost the life of the patient through shock or sepsis. Post-operative infection or irrational treatment has also left in many cases which have been operated on a complete ankylosis of the joint. My experience, which is based upon three cases of from eight to 12 weeks' standing, comprising a case of obturator, perineal and iliac dislocation complicated by a fracture of the acetabulum, has strengthened my conviction that much good may be obtained by applying the older or modern methods of reduction, especially since the exact condition of the dislocated joint can now be explored more thoroughly by radiography. The surgeon in deciding upon the method of treatment should always be mindful of the interesting facts that anatomical research in the condition of inveterate dislocation of the hip has recently brought to light. It is important to notice that the head of the femur as well as the cavity of the acetabulum may retain their cartilage in an unchanged condition for years after the dislocation has taken place. It is true that the cavity of the joint frequently becomes filled with fibrous tissue of varied thickness and density, but beneath this newly formed connective tissue the cartilage may remain unchanged. The newly formed tissue owes its existence to the proliferation of the torn capsule and the round ligament; hence we understand why the pathological conditions of the dislocated joint are mainly dependent upon the gravity of the injury and only in a secondary manner upon the duration of the

dislocation. The older surgeons, such as Cooper, Hamilton, and Bigelow, were of opinion that dislocations of the hip became irreducible and inveterate after from five to six weeks. From the writings of Maydl and others we know that this is not the case, as it has been proved, both in traumatic and pathological dislocations, that even a lapse of 13 years did not interfere with their reduction by bloodless methods.

FIG. 14.

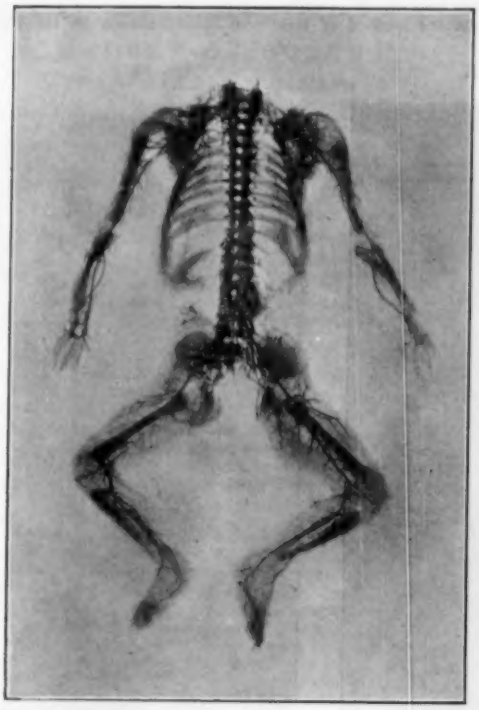


Plate showing injection of whole system from femoral vein after ligation of vena cava.

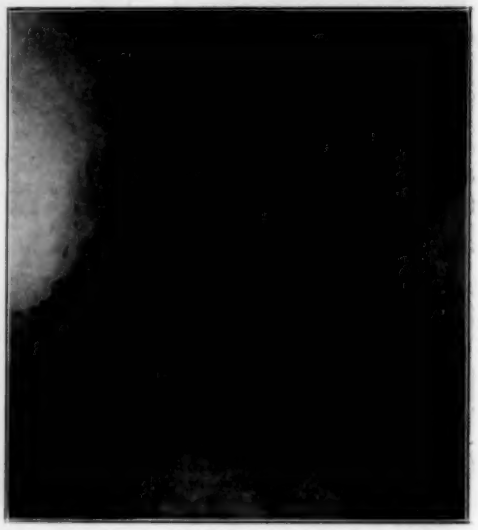
My method of procedure is as follows. After determining the exact position of the dislocated bone I begin a preparatory treatment consisting in extension. The duration of its application varies according to the degree of shortening found in the muscles and soft parts generally. All attempts at reduction are performed gently by manipulation only. I have found that transposition of the dislocated bone is a great help, especially in cases of posterior dislocation. Experimental research performed on the dead subject has proved to me that in transposing the dislocated bone the rent in the capsule becomes so wide that the retention of the femur in the socket is only maintained by Bertini's ligament. Transposition is easily achieved when the long axis of the rent in the capsule runs parallel to the capsular fibres and is situated near the trochanteric insertion of the capsule. Unsurmountable difficulties were only found in the case of infants. After transposition it is easy to move the dislocated bone into any position. Where I have not succeeded in my first attempts at reduction I have placed the femur in a position as near the acetabulum as possible and retained this position of the femur in a plaster-of-Paris bandage for several weeks, allowing the patient to walk in his bandage. As in a case recorded by Schumacher, spontaneous reduction ensued. Our attempts at the bloodless treatment of inveterate dislocations should not even stop here. Transposition of posterior dislocation is a valuable element of treatment in itself, since we know that any point on the horizontal ramus of the pubic bone or even of the ilium right up to its superior spine may serve as a good nucleus for a nearthrosis.

In my third case all attempts at reduction failed; a fracture of the pelvis running through the acetabulum had produced a new formation of bone, filling the joint cavity to such an extent that reduction became impossible. I transposed the femur, which stood behind the acetabulum, forward and conducted the after-treatment in such a manner that a nearthrosis formed in a favourable position. The result was most satisfactory; the patient is doing ordinary work in the fields and moves about for hours without pain. A radiograph taken years after the injury shows to what an extent the new acetabulum has developed and how strongly the femur is supported in its present position by a bridge of bone running along its upper surface. Such experiences should surely encourage the revival of the older and less dangerous methods of bloodless treatment in cases where the anatomical conditions of the dislocated joint are in their favour.

PATHOLOGY AND TREATMENT OF KELOID.

Since Alibert's fundamental treatise on keloids was published in 1817 many theories have been advanced as to their causes, nature, and treatment. The ancient classification into spontaneous and traumatic keloid has been abandoned, for, as Hutchinson truly says, "keloid appears to me to be essentially a disease of cicatrix tissue and I much suspect that it never originates in normal skin." This view of Hutchinson has been borne out by the more recent researches of Wilms, Leloir, Widal, and many others. Anatomically and histologically it may be impossible to make any distinction even between keloid in an early stage and a hypertrophic scar, although clinical evidence proves conclusively that such a difference does prevail, as in the one case recurrence sets in after excision, whereas in the other a normal scar is formed. Due to exceptionally favourable circumstances, I have had ample opportunity of examining keloids in various stages of formation, appearing

FIG. 15.

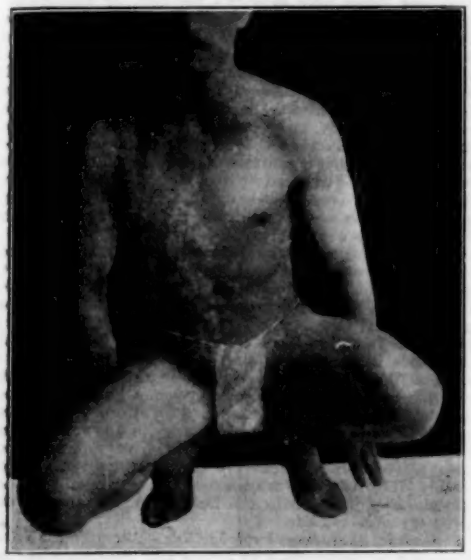


Irreducible dislocation of the hip; the illustration shows the nearthrosis which occurred in the third case, the head of the femur being in its new or acquired socket. A ridge of newly formed bone supports the femur on its upper surface in its new position.

in the same patient after an electrolytical treatment for hypertrichosis. In the histogenesis of keloids it appeared to me an essential factor that totally different causes, such as traumatism, acute chronic inflammation, and even the use of various pigments for tattooing purposes, produce similar anatomical conditions. Careful examination of keloids and hypertrophic scars has led to the following results. Both in hypertrophic scars and in keloids a degeneration of elastic tissue takes place. Its regeneration is inhibited. In keloids the area of degeneration is situated in the reticular and in the hypertrophic scar in the papillary layer of the cutis.

Zenthoefer and others have shown that elastic tissue serves as a kind of skeleton to the skin, varying in its arrangement and density according to the mechanical condition to which the various regions of the skin are subjected. A loss of elastic tissue or local damage incurred by the elastic tissue signifies a weakening of the skin's resisting powers; such loss naturally is of greater consequence when the deeper layer of elastic tissue is affected than when only the superficial stratum is damaged. This accounts for the difference of connective tissue fibre in the keloids and in the hypertrophic scar. In keloids such fibres are abnormally thick and rich in collagene, whereas the hypertrophic scar consists of the ordinary cicatrix tissue. I am therefore inclined to regard keloids as a form of functional hypertrophy produced in the

FIG. 16.



The result of after-treatment in the same case, showing complete recovery of movement.

connective tissue by the destruction of its elastic skeleton. There is a marked analogy between the formation of aneurysm and keloids, inasmuch as in both cases the pathological conditions are the result of local damage done to the elastic tissue.

My histological results harmonise fully with all recent observations on the pathology of elastic tissue. Acute as well as chronic inflammatory processes, such as syphilis, tuberculosis, &c., act as a kind of solvent on the elastic fibres and inhibit their regeneration. These facts explain the formation of keloids and hypertrophic scars in a variety of circumstances affecting the deeper layer of the cutis in the one case and the superficial in the other case. Since the formation of keloids is so frequently associated with a general widely diffused tendency of the skin to succumb to local traumatism and since keloids result from a destruction of the deeper layer of elastic tissue it is apparent why they should recur after operation. On the other hand, the hypertrophic scar being the result of a localised pathological condition solely affecting the sub-epithelial elastic fibre layers it is clear why its excision, entailing the removal of the *causa peccans*, leads to complete recovery. How rarely surgical treatment of keloids is attended by success is but too well known to all of you. Some years ago I advised a new method of treatment which consists of the excision of keloids, followed by the application of skin grafts to the wounded surface. This method suggested itself to me after I had discovered that under the influence of skin-grafting a regeneration of elastic tissue takes place even more quickly than in wounds which heal by first intention. My results are satisfactory. They have become better since I have applied open-air treatment to the newly grafted surface, using no dressings whatever for the first few hours, during which the skin grafts become adherent to the wound. It is good to protect the grafts until one can rely upon the new formation of elastic tissue. Such protection is insured by making the patients wear pads over the grafted surface which through the influence of soft springs exercise a certain amount of pressure upon the grafted area during the first few weeks after operation.

THE PATHOLOGY AND BACTERIOLOGY OF SEROUS AND PURULENT PLEURAL EFFUSIONS IN CHILDREN.[1]

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IN thinking about pleural effusions in children the first point which confronts us is the great difference between the frequency of serous and purulent effusions in children and adults respectively. Gee[2] analysed 867 cases of pleurisy with effusion at all ages treated at St. Bartholomew's Hospital between the years 1884–93 inclusive and found that there were 169 cases occurring in children under ten years of age, and of these 84 were non-purulent and 85 were purulent, whereas of the 698 cases occurring in subjects over ten years of age 567 were non-purulent and only 131 purulent—i.e., while in adults the serous effusions preponderated over the purulent in the ratio of 4 to 1, in children they were practically equal in number. Goodhart and Still[3] found that of 149 cases of pleural effusion occurring in children 71 were serous and 78 purulent.

In cases occurring amongst children there is a good deal of disparity as to the influence of age on the serous or purulent nature of the effusion. Thus Holt[4] states that under the age of three years fluid is almost certainly purulent, and in this he is supported by Gee who found that of 78 cases under five years of age there were more than twice as many purulent as serous (53 to 25). On the other hand, of 58 cases examined by Goodhart and Still the serous effusions preponderated over the purulent (32 to 26).

Empyemata in children are said to differ from those in adults in that the effusion in children is purulent from the first, whereas in adults it is more common for an empyema to originate from a serous effusion. With regard to this statement I will only point out that if we are going to compare an empyema of a child with one in an adult we must take pains to compare empyemata which are alike bacteriologically. We must compare two pneumococcal empyemata or two streptococcal empyemata—we must not draw comparisons between a pneumococcal and a streptococcal empyema, and in this connexion we may remember that Netter found that while 53·6 per cent. of empyemata in children were pneumococcal, practically the same number in adults were due to the streptococcus. Netter[5] examined 109 cases at all ages and classified his results as follows:—

In adults:	Streptococci	53·0	
	Streptococci and pneumococci	2·5	74·0
	Pneumococci	17·3	
	Staphylococci	1·2	
	Tubercle and putrid		26·0
In children:	Pneumococci	53·6	
	Pneumococci and streptococci	3·6	74·8
	Streptococci	17·6	
	Tubercle and putrid		25·2

In discussing the bacteriology of effusions it will be more convenient to speak of empyemata first, because in children purulent effusions are so much more common relatively than serous, and the bacteriological factor is easier to determine in purulent than in serous effusions; it is, in fact, for these reasons that most of the work on the bacteriology of

[1] A paper read in abstract at a meeting of the Society for the Study of Disease in Children on Dec 15th, 1905.
[2] Allbutt's System of Medicine, vol. v., p. 347.
[3] Goodhart and Still: Diseases of Children, p. 386.
[4] Holt: Diseases of Children.
[5] Netter Traité de Médecine, vol. iv, 1893.

effusions in children has been directed to the examination of empyemata. All observers are agreed that the organisms chiefly concerned in the empyemata of children are the pneumococcus, the streptococcus, the staphylococcus, and the tubercle bacillus. Of these, with rare exceptions, only the pneumococcus and the streptococcus are found pure.

Empyemata due to the pneumococcus.—About 75 per cent. of empyemata in children are due to the pneumococcus. This number is the average taken from 205 cases collected by the following observers: Netter[6] in Paris examined 66 cases and found the pneumococcus present in 65 per cent.; Koplik[7] in America examined 15 cases and found the pneumococcus present in 60 per cent.; Still at Great Ormond-street examined 15 cases and found the pneumococcus present in 93 per cent.; Blaker[8] at Shadwell examined 69 cases and found the pneumococcus present in 88 per cent.; and Bythell[9] at Manchester examined 40 cases and found the pneumococcus present in 65 per cent. In the majority of cases the pneumococcus is found pure, but it may occur mixed with the streptococcus, the staphylococcus, the tubercle bacillus, Friedländer's bacillus, or the micrococcus tetragenus.

Cases of pneumococcal empyema may be divided into two classes: (*a*) empyema associated with pneumonia; and (*b*) empyema independent of pneumonia, the so-called primary empyemata.

(*a*) Lemoine[10] subdivided class (*a*) into: 1. Peri-pneumonic cases, cases accompanying pneumonia, in which there is a gradual effusion of purulent fluid in a case of pneumonia. 2. Meta-pneumonic cases, cases secondary to pneumonia, in which the pneumonia does not end by crisis but is followed by a short afebrile period, after which perhaps a sudden considerable rise of temperature will usher in an empyema, or, as the mother often expresses it, "the child was doing very well for two or three weeks after the pneumonia when he seemed to fall back again." Lemoine says the secondary cases occur in debilitated subjects and the importance of distinguishing the two varieties lies in the fact that the peri-pneumonic variety, even though the effusion be large, is rapidly absorbed, while in the meta-pneumonic variety the duration of the disease is much more protracted. Blaker's experience, however, is directly opposed to this. He says that the meta-pneumonic cases do better than the peri-pneumonic, and this he attributes to the presence of incomplete resolution of consolidated lung in the peri-pneumonic, while in the meta-pneumonic cases the pneumonia has had time to undergo complete resolution before the occurrence of the empyema. A peri-pneumonic empyema may be said to be complicated by an unresolved pneumonia. In these pneumonic cases of empyema the pneumococcus probably reaches the pleural cavity by direct invasion from the consolidated lung. Bythell found abundant pneumococci in the lymphatic spaces in every layer of the subserous and serous portions of the pleura as well as throughout the lung.

(*b*) With regard to the so-called primary empyemata there are two views. 1. The empyema is really primary—i.e., is independent of any antecedent pneumonia. 2. The empyema is only apparently primary; it arises from an undiscovered patch of broncho-pneumonia and so differs in no essential respect from the pneumonic cases. Personally I believe in the primary nature of these cases. Washbourn[11] in 1894 drew attention to such cases. He described three pneumococcal empyemata in which the symptoms resembled those of pneumonia—viz., a sudden onset with rigor, labial herpes, high fever, cough, rapid breathing, and delirium. The following is a typical case which came under my own notice. An infant, aged 11 weeks, was admitted with signs and symptoms leading to a diagnosis of apical pneumonia of the right side of five days' duration. The infant died seven days after admission and at the necropsy an empyema containing from four to five ounces of pneumococcal pus was found and there were no signs of any pneumonic consolidation. Now in such a case as this I cannot conceive of the existence at any time of even a small patch of consolidation. The entire illness only lasted 12 days and during the whole of this time the patient was acutely ill and certainly in no condition to permit of the resolution of a patch of pneumonic consolidation, however small.

On theoretical grounds it is quite possible to conceive of the infection of the pleural cavity arising without the intervention of pneumonia, for we must remember that the pneumococcus is constantly present in the mouth and pharynx in health and it may be that during a period of lowered resistance on the part of the individual it travels down the air passages, gains access to the pleura, and there sets up a suppurative inflammation without producing any appreciable change in the lung. To draw a comparison, von Behring has shown that the tubercle bacillus can pass through the intestinal mucous membrane without producing any visible change in the intestinal wall.

Empyemata due to the streptococcus.—Netter found that 17·6 per cent of empyemata in children were caused by the streptococcus and 53 per cent. in adults. The streptococcus was found pure in only 4 per cent. of Blaker's and in 5 per cent. of Bythell's cases. While the streptococcus may occur alone it is generally mixed with the pneumococcus, the staphylococcus, or the tubercle bacillus. Streptococcal empyemata may be: 1. Secondary to pneumonia, especially the pneumonia which complicates or follows the acute infectious fevers, measles, scarlet fever, and diphtheria. Councilman, Mallory, and Pearce[12] found from an examination of 220 fatal cases that the streptococcus alone or associated with other organisms was a common factor in the pleurisy of diphtheria and scarlet fever. 2. Secondary to inflammatory lesions elsewhere than in the lungs—e.g., suppurative otitis media. 3. May arise primarily like the primary pneumococcal empyemata.

Empyemata due to the staphylococcus.—The staphylococcus is not infrequently found in empyemata secondary to suppurations of other parts of the body—e.g., infective periostitis. It is a rare organism to find in primary empyemata, and this fact led Netter to state that if only staphylococci are found in a case of empyema it is probably tuberculous in origin and that more time is required to determine the presence of the tubercle bacillus than of the staphylococcus. Staphylococcus pyogenes aureus and albus were the commonest organisms found by Steele[13] in 25 cases and by Hervieux in 14 cases of pleurisy in the newly born. These are cases occurring in the children of septic mothers and the infection is chiefly *viâ* the umbilical vein, though possibly the infection may arise from the milk. Such pleurisies occur not only in the newly born but arise at any period of embryonal life.

Empyemata due to the tubercle bacillus.—According to Netter 25 per cent. of empyemata in adults and children alike are due to the tubercle bacillus. Be this so, it is nevertheless very rare to find the tubercle bacillus in purulent effusions. According to some observers the absence of any micro-organism in an empyema points to its tuberculous origin, and on the other hand the presence of tubercle bacilli in an empyema is said to indicate a communication between the pleural cavity and a caseous focus in the lung or in a bronchial gland. Bythell suggests that different organisms have different powers of invasion of the pleural cavity from the lung, so that in a case of pulmonary tuberculosis complicated by an empyema it is far more likely to find a pneumococcal or a streptococcal or a staphylococcal empyema than a tuberculous one.

Many other organisms are occasionally found in empyemata. Several observers have found the bacillus typhosus both in serous and in purulent effusions occurring in the course of typhoid fever independently of any disease of the lung. Friedländer's bacillus, the bacillus coli communis, the diphtheria bacillus, and the micrococcus tetragenus have occasionally been observed. Putrid effusions are sometimes met with and in these organisms of putrefaction, especially proteus, are found. The exudates associated with malignant growths are generally sterile. In one of Bythell's cases, however, a pneumococcal empyema complicated a sarcoma of the lung.

The virulence of the organisms.—All observers are agreed that a pneumococcal is mild in comparison with a streptococcal or a tuberculous empyema. It must, however, be remembered that although the empyema is proved bacteriologically to be pneumococcal, it may in reality be complicating a pulmonary tuberculosis or even a sarcoma of the lung. Again, many streptococcal empyemata run a mild course. Considering pneumococcal apart from other

[6] Ibid.

[7] Koplik: Etiology of Empyema in Children, American Journal of the Medical Sciences, 1891.

[8] Blaker: Brit. Med. Jour., May 23rd, 1903.

[9] Bythell: Journal of Pathology and Bacteriology, 1903-04.

[10] Lemoine: Des Pleurésies Parapneumoniques, La Semaine Médicale, 1893.

[11] Washbourn: Transactions of the Royal Medical and Chirurgical Society, 1894.

[12] Journal of Boston Society of Medical Sciences, 1900.

[13] Steele: Philadelphia Medical Journal, Sept. 17th, 1898.

empyemata I would say that they exhibit three degrees of virulence:—

1. There is a mild variety, in which the pneumococcus remains localised to the pleural cavity. This is the case with the uncomplicated empyema.

2. There is a more severe variety, in which the pneumococcus spreads from the pleural cavity, *viâ* the *lymphatics*, and gives rise by *direct extension* to pericarditis, peritonitis, or to empyema of the opposite side. This class includes those cases described by Frederick Taylor under the term polyserositis or polyorromenitis, when they are due to the pneumococcus and when they begin in the pleural cavity.

3. And finally, there is a very severe variety in which the pneumococcus gains access to the *blood stream* and gives rise by *metastatic infection* to such complications as meningitis, cerebral abscess, endocarditis, subcutaneous abscess, and purulent arthritis. In this way arises pneumococcal septicæmia as a result of pneumococcal infection of a pleural cavity. In many cases of pneumococcal septicæmia an empyema occurs which is only the expression of a localisation of a general blood infection, but in some cases it appears as if the general septicæmia results from the empyema, and it is this class of case that I am including in the above description.

In connexion with infection starting from the pleural cavity I would draw your attention to the not infrequent presence, in cases of pneumococcal polyserositis, of small collections of pus situated behind the parietal pleura generally close to the vertebral column and about the level of the roots of the lungs. The presence of pus in such a position, I take it, is best explained by direct extension along lymphatics from the pleural cavity or possibly from infected bronchial glands, and although as a rule these collections are small in amount and consequently of little significance at times they acquire such dimensions as to dominate the clinical features of the case and I think then that the name "pseudo-empyema" might be applied to describe them. The following is a brief account of a case in point. A male child, aged two years and two months, was admitted into hospital on the day before his death extremely emaciated, in a moribund condition, and with the history of having been ill with cough and shortness of breath for four months. At the necropsy, on opening the thorax it was seen that the mediastinum was displaced to the left. There was a considerable quantity of thin purulent fluid in the pericardium and both layers of the pericardium were covered with a thick villous fibrinous deposit. Both pleural cavities were obliterated as the result of an acute fibrinous pleurisy and the cause of the displacement of the heart at first was not obvious. It proved, however, to be due to a collection of three and a half ounces of creamy greenish-yellow pus lying on the right side behind the parietal pleura, which had been stripped from the under surface of the ribs along the entire posterior and lateral aspects of the thorax. The inflammation in the right pleura was acute and purulent but the two layers were for the most part "glued together" by a recent fibrinous deposit. In the left pleural cavity the inflammation was acute but there was no pus. Further, on the left side, behind the parietal pleura, close to the spine, and just below the level of the root of the lung, was about half a drachm of pus similar in character to the very much larger collection lying behind the right pleura. The right lung was collapsed and airless; the left lung was crepitant. The pus from the pericardium, the right pleural cavity, and from the "pseudo-empyema" was pneumococcal.

Nuthall and Billington[14] have noted similar small post-parietal collections of pus in two cases of pneumococcal septicæmia.

Bythell has drawn attention to the amount of phagocytosis affording an indication of the prognosis. He found that in every case in which there was a good phagocytosis associated with a large number of well-stained organisms—irrespectively of species—the symptoms were mild and the recovery rapid. On the other hand, phagocytosis was generally poor or absent in cases characterised by long and severe symptoms and also in those which ended fatally. Bythell has also pointed out that the naked-eye appearance of the pus is not a trustworthy indication of the bacteria which it contains. In a typical pneumococcic empyema the pus is thick, viscid, of a pale greenish colour, and without any tendency to divide into layers. Now while these characteristics were present in a majority of his pure pneumococcic cases, in a definite number the fluid was sero-purulent and rapidly separated into two layers. On the other hand, while streptococcic pus is typically thin, yellowish in colour, and on standing separates into two layers, the upper of which is clear and abundant, in one case due to the streptococcus in association with the staphylococcus and in another due to the streptococcus and the pneumococcus, the pus was thick, viscid, and exactly resembled pure pneumococcic pus.

The bacteriology of serous effusions might almost be dismissed with the statement that bacteriologically there is no essential difference between a serous and a purulent effusion. The same organism may produce at one time a serous and at another a purulent effusion. This is certainly true of the pneumococcus, the streptococcus, the staphylococcus, the tubercle bacillus, and the bacillus typhosus. Occasionally in cases of double pleurisy we find a serous effusion in one cavity and a purulent in the other, and cases of multiple effusions in the same pleural cavity are on record in which the contents of one loculus are purulent and that of another serous. Difficult as it sometimes is to determine the bacterial agent in an empyema, it is still more difficult to determine it in the case of serous effusions, for in the majority of these no micro-organism can be found by the staining of films made after centrifugalising a clear exudate, or by cultural methods, or even after inoculations have been made into animals. Again, in dealing with serous effusions, we are confronted with a difficulty that does not present itself in the case of empyemata, for given a clear effusion it is not always easy to determine whether it be an inflammatory exudation (pleurisy with effusion) or a non-inflammatory transudation (hydrothorax). For example, a serous effusion makes its appearance in a case of Bright's disease or chronic valvular disease of the heart; we examine for micro-organisms, fail to find any, and assume it to be a passive transudation, whereas in reality it may be found to be a tuberculous pleurisy with a serous exudation but in which no micro-organisms could be found. On the other hand, in dealing with empyemata we may assume that all are inflammatory and associated with, if not actually due to, the action of micro-organisms.

The most important bacteriological work in connexion with serous effusions has been carried out on so-called cases of idiopathic pleurisy, cases of pleurisy with sero-fibrinous exudation apparently due to chill occurring in subjects previously in good health and often of robust physique. Netter made inoculation experiments in 55 cases of serous effusion. Out of 16 known to be tuberculous he obtained a positive result in eight; out of 25 supposed to be caused by exposure to cold 10 were proved to be tuberculous; and 14 cases, due to rheumatism, pneumonia, cancer, or Bright's disease, gave negative results in every instance. Netter concludes as a result of this work that 40 per cent. of all primary exudates are tuberculous and that in sero fibrinous pleurisy the tubercle bacillus is the most common agent. Eichhorst, by using larger quantities of the exudate for inoculation—viz., 15 cubic centimetres—found evidence of tuberculosis in 62 per cent. Le Demany, by using still larger quantities (viz., from 10 to 50 cubic centimetres and sometimes as much as 300 cubic centimetres), demonstrated the tuberculous nature of 47 out of 55 cases of primary pleurisy—i.e., 85 per cent. Jousset[15] by allowing the fluid removed by tapping to stand, and digesting the coagulum with artificial gastric juice, centrifugalising, and then staining films, found tubercle bacilli present in every one of 20 cases of primary sero-fibrinous pleurisy. The results of many observations by different workers tend to the conclusion that of cases of idiopathic pleurisy perhaps so high a percentage as from 70 to 75 are tuberculous. On the other hand, Osler only found out of 101 cases of acute pleurisy which he examined post mortem 32 cases which were undoubtedly tuberculous.

A good deal of work has of late been done on the cytological examination of the exudate in these cases of idiopathic effusion, based on the observations of Widal and Ravant, and briefly the results may be stated to be: (1) in tuberculous effusions there is a preponderance of small mononuclear cells (lymphocytes); (2) in other inflammatory effusions the polymorphonuclear cells are the more abundant; and (3) in mechanical transudations the cells are fewer than in either of the foregoing varieties and consist of flat endothelial cells often in groups.

[14] Nuthall and Billington: Birmingham Medical Review, January, 1903.

[15] Jousset: La Grèce Médicale, Jan. 13th, 1903.

Probably a preponderance of lymphocytes points to a slight irritation, and as such irritation is generally tuberculous it may be accepted as a proof of the tuberculous nature of the pleurisy. On the other hand, a large number of polymorphonuclear cells points to a more acute irritation of the pleura, and therefore indicates a tuberculous pleurisy of recent origin, or if found late a pleurisy of a different nature. In this connexion, however, we find contradictory statements. Thus, Gibson[16] of Edinburgh says that "the relative proportion of the leucocytes is an expression of the stage and extent of the reaction rather than a proof of the nature of its cause. During the early stages of all types the polymorphonuclear cells predominate, during the later stages the lymphocytes predominate." On the other hand, Hadley[17] stated at the British Medical Association meeting in 1905 that "the longer the effusion has been present the more polymorphonuclears there will be, so that even in tubercular cases of long standing the polymorphonuclear will be the more abundant cell. Indeed, a majority of lymphocytes go to prove tubercle, but a majority of polymorphonuclears does not prove the absence of tubercle if the case is of long standing."

With regard to serous effusion in children, in whom rheumatism in one or other of its varied manifestations is so common a disease, the question arises as to whether some of these primary effusions are not possibly rheumatic in origin. The practical difficulty in the solution of this problem lies in the fact that while rheumatic pleurisy is common it tends to be fibrinoplastic in character and so rarely needs paracentesis. However, the first step has been taken, for Poynton and Paine[18] have found in pleural effusions the diplococcus associated with their names in cases of rheumatic polyserositis and have been able to produce rheumatic pleurisy experimentally.

Cytodiagnosis will not assist in distinguishing a tuberculous from a rheumatic effusion, for in both cases it is the rule to find a preponderance of lymphocytes. In such cases, however, I have been helped by an examination of the blood, for while in tuberculous pleurisies a leucopenia is found a moderate amount of leucocytosis is the rule in rheumatic pleurisies.

Birmingham.

A CASE OF POISONING BY NITROBENZOL.

BY A. H. H. VIZARD, M.D. EDIN.,
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CASES of poisoning by nitrobenzol, otherwise known as nitrobenzene, artificial oil of bitter almonds, essence of mirbane, are rare, and the following case which recently occurred at Bermuda may be of interest.

The patient, a young white man, aged 21 years, employed as an engineer in a tug-boat, was brought to the dockyard surgery about 2 P.M. on Oct. 12th in a collapsed and unconscious state, his two coloured companions stating that he had drunk some "acid" several hours previously and had had no medical assistance. I was immediately sent for and meanwhile he recovered consciousness, answering a few questions. Some lime-water had been given him before my arrival, the term "acid" being taken literally.

When I saw the patient some ten minutes later I found him in an extreme state of collapse, with intense lividity of the face, but there were no signs of burning or charring about the mouth. Almost immediately he suddenly vomited profusely several pints of clear mucous fluid containing small particles of food. The adjacent wall and floor, together with his clothing, were covered with the vomited matter, and the atmosphere of the room instantly became charged with the odour of almonds from the vomit. The patient seemed relieved for a few minutes and was able to answer a few questions. He was so collapsed, however, that it was not considered advisable to make him vomit again immediately. He was laid in a recumbent position and covered up; brandy was given him by the mouth and strychnine hypodermically, and hot water bottles were applied to his stomach and feet. He expectorated freely several times. The pulse, though rapid, became stronger, the breathing was a little more rapid than usual, but the extreme lividity of the face continued; the skin was cool and the pupils were both widely dilated. About half an hour afterwards the pulse became weaker and irregular and as he could not swallow brandy ether was injected hypodermically. No convulsions occurred but the patient moaned occasionally and several times moved his hand towards his mouth. He gradually became comatose, although the pulse was quite perceptible, but about 3.50 P.M. the pulse suddenly ceased and in spite of hypodermic injections of ether he never recovered.

From two companions employed in the same tug the following history was obtained. About 10.30 A.M. on that day the patient told one of them that he felt "bad," having swallowed some "rackarock oil" in mistake for whisky. He said he had taken three sips from the bottle, had swallowed the first two, but the last tasted strange so that he spat it out and made himself sick by putting his fingers down his throat. He said he had told no one about it and did not say at what time he had made the mistake. As he had been awakened that morning at 7 A.M., having slept on board the tug, and had had breakfast afterwards it is concluded that he must have taken the fluid with or after his breakfast, about 8 A.M. Apparently at 10.30 A.M. he did not feel very ill as the tug then started for the town of St. George's, about 18 miles distant, to embark soldiers, and he drove the engines there. The time occupied in the journey was about one and a half hours, and although he mentioned once or twice that he felt "bad" he was well enough to make the tug race another steamboat part of the way. Towards the end of the journey he slept a little while and on reaching his destination he said that he felt well and did not want to see a medical man but went ashore to buy some food. The tug left St. George's about three-quarters of an hour after arriving and he then ate some food—about 12.45 P.M. Half an hour afterwards he was found leaning against the reversing lever in the engine-room and collapsed on to the floor. He did not speak for about two minutes, but soon recovered and said that he felt all right, asking for a feeding-can to oil the engines, which another man did for him, as he fell down when trying to mount a ladder. The odour of the so-called "acid" was observed by a companion and the patient said "that stuff is coming out all through me." At the second collapse a fireman noticed that his lips were blue and that there was some froth about them. Shortly afterwards he collapsed again and did not speak; some soldiers assisted to get him on deck, where he remained till arriving in Grassy Bay, near the dockyard, about 2 P.M. His companions managed to get him into a dinghy and rowed into the dockyard camber. He was carried to the surgery where I saw him about 2.15 P.M. I thought from the odour of the vomited matter and the external appearance of the patient that the so-called "acid" must be nitrobenzene and this was confirmed by a man in charge of blasting operations who said they used "oil of mirbane." This substance is added to an explosive substance, "rackarock," before its use in blasting.

Remarks.—Nitrobenzol is described by Guy and Ferrier as an oily liquid of a pale yellow colour with an odour like bitter almonds. It is a powerful poison when inhaled or swallowed. The chief point of interest in this case is the length of time that elapsed after swallowing the poison before serious symptoms of poisoning occurred. It was probably swallowed about 8 A.M., but the patient first mentioned its occurrence at 10.30 A.M. It was not until after 1 P.M. that he became seriously ill, although at intervals between 10.30 A.M. and 1 P.M. he said it was making him feel "bad." He was even able to make his tug race another steamboat on the way to St. George's. At noon he evidently felt well enough to do some shopping and did not go to consult a medical man when he had the opportunity of so doing, so the poison must have been in his stomach four or five hours at least. After 1 P.M., when collapse first commenced, he was still able to talk about having taken the "oil" and to take an interest in his engines. The three attacks of collapse quickly followed each other and when seen the case appeared to be hopeless. This retardation of symptoms of poisoning is mentioned in the text-books and certainly was very marked in this case. Another feature was the extreme lividity of the face and the purple colour of the lips. The pupils were both widely dilated but became smaller shortly before death. The muscles were flexed, no

[16] Gibson: Brit. Med. Jour., Jan. 7th, 1903.
[17] Hadley: Ibid., Oct. 21st, 1905.
[18] Poynton and Paine: THE LANCET, Sept. 22nd (p. 861) and 29th (p. 932), 1900.

convulsions occurred, and death took place suddenly from cardiac failure.

The poison is said to produce a burning sensation in the mouth. In this case it is remarkable that the mistake was unnoticed until the third mouthful had been taken, which the patient expectorated. He stated that he had made himself vomit but for four or five hours he must have had a considerable quantity of the poison in his stomach. He never described his sensations and only remarked after the second attack of collapse that "the stuff he drank was coming out all through him" and so probably perceived the odour in his breath. Almost up to the time of his death he was able to answer questions. The free vomiting seemed temporarily to relieve him but the poison must have continued to act after the removal of the contents of the stomach. The bottle containing the fluid from which he had taken his draught had been thrown overboard when I sent for it. The reason why this fluid had been taken on board the tug was never discovered. Most of the symptoms observed follow closely the description of the poison given in the text-books, but I have been unable to find another case in which such a large quantity of this substance has been taken and in which serious symptoms have been delayed so long as four or five hours.

Ireland Island, Bermudas.

STRANGULATION OF AN INFANTILE UMBILICAL HERNIA.

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THE patient, a well-nourished child, aged 17 months, was taken to the out-patient department of the Belgrave Hospital for Children on June 22nd, 1905, with the following history. An umbilical hernia was noticed soon after birth but the protrusion was never great and it was always easily reducible by the mother. On the morning of June 21st the swelling was noticed to be larger than usual; shortly after, the child, who previously had been in good health, was in great pain and she vomited 12 times in the 24 hours preceding admission. The bowels acted at 5 P.M. on the 21st after a dose of castor oil but no motion was passed between that hour and the time of admission, 11 A.M. on the next day. The child then looked very ill, the pulse was 136, and the temperature was normal. Immediately beneath the umbilical scar was a tense swelling, measuring about two inches in length by one inch in breadth, and connected by a narrow pedicle to the abdominal wall. The skin covering it was stretched and bluish in colour and there was no impulse when the child cried.

When the child was anæsthetised an unsuccessful attempt was made to reduce the hernia by taxis. An incision was then made and the sac, which was found to have a very narrow neck, was separated from the surrounding tissues and then opened, allowing a quantity of odourless serous fluid to escape. No bowel was found but a piece of omentum, which was discoloured and which showed a number of small petechiæ, was so tightly constricted at the neck of the sac that this had to be divided before any healthy omentum could be drawn from the abdominal cavity. The omentum was ligatured and removed, the sac was cut away, and the small gap in the abdominal wall was closed by silk stitches. There was no vomiting after the operation and the bowels acted in the evening of the same day. With the exception of some slight superficial suppuration convalescence was uneventful and the child was discharged with the wound healed on July 12th. She remained perfectly well until Nov. 30th when she was seen by Dr. O. F. F. Grünbaum at the Belgrave Hospital for an attack of vomiting with constipation which it was thought might be due to some obstruction from adhesions following on the operation. She was admitted but the bowels acted well after an enema and she soon recovered and has remained perfectly well since. The scar is perfectly sound and there has been no protrusion since her discharge last July.

Three varieties of umbilical hernia may be distinguished, of which two occur in children. 1. The congenital umbilical hernia in which a loop of intestine is found outside the abdominal cavity projecting into, and distending, the proximal part of the umbilical cord. This, however, is not a true hernia but is due to the persistence of the condition found in fœtal life before the third month where a loop of intestine developed from the mid-gut always projects well beyond the abdominal cavity. 2. The infantile umbilical hernia which is due to a yielding of the umbilical cicatrix and may appear very soon after birth. This variety of hernia undoubtedly tends to disappear as the child grows older and it is very unusual for it to persist till adult life. The third variety is the umbilical hernia of adults, which rarely appears before the age of 25 years. The congenital hernia usually contains a loop of ileum and usually a portion of colon with the cæcum and appendix and, as might be expected from its development, a Meckel's diverticulum when this structure is present. The infantile hernia usually contains omentum and frequently also a loop of ileum or colon.

Strangulation of an umbilical hernia in a child is a rare occurrence. I find that 79 cases of strangulated umbilical hernia have been treated at Guy's Hospital during the past 25 years. Of these 77 were in adults, the youngest patient being 33 years of age while two occurred in children, aged five days and one day respectively. These, however, were both cases of the congenital variety and though classified with strangulated hernias the trouble appeared to be, at any rate in part, due to sloughing of the coverings of the sac with subsequent peritonitis in the older child, while in the other the evidence of strangulation is doubtful. Both these children were operated on, the intestine being replaced, but in each case the child died. A number of similar cases have been recorded by Mr. W. G. Spencer[1] and Mr. D'Arcy Power,[2] while Mr. J. H. Ray[3] records a case in which he was unable to return the loop of intestine to the abdominal cavity owing to the large size of the former and the small capacity of the latter. The loop of intestine was accordingly excised, but the child, who was only five days old, died from peritonitis. Indeed, when symptoms of obstruction have appeared in a congenital hernia the result is almost invariably fatal, the cause of death usually being peritonitis. In a number of cases, however, the intestine has been placed within the abdomen before any such symptoms have appeared with a successful result. The case which I have described, however, differs from these in that it was undoubtedly an infantile umbilical hernia, and strangulation of this form of hernia is a very rare occurrence. I can suggest no reason why it should have occurred except that the neck of the sac was extremely narrow, not more than one-third of an inch in diameter, and the margin of the ring very sharp. There was no point of interest about the actual operation, but it was satisfactory to find that in spite of the suppuration there had been no recurrence of the hernia five and a half months afterwards.

St. Thomas's-street, S.E.

TWO CASES ILLUSTRATING SCIATICA OF ABDOMINAL ORIGIN; LAPAROTOMY.

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THE two following cases are interesting and are recorded, not so much from the standpoint of the actual lesions themselves as for the remote conditions to which they gave rise. The cause of the sciatica in both instances was only recognised when other subsequent, independent, and direct symptoms (apart from sciatica) drew attention to, and caused the sufferers to seek advice for, a condition of affairs existing within the abdominal cavity which had not hitherto been suspected as giving rise to the nervous affection. The first case is one illustrative of what may be called the true sensory physiological reflex nervous response of one spinal segment to peripheral irritation existing in the area supplied by another adjacent spinal segment. Ovarian reflex pain was ably handled by Dr. G. Ernest Herman in his address to the Gynæcological Section of the

[1] Transactions of the Pathological Society of London, vol. xlix.
[2] Ibid., vol. xxxix.
[3] Proceedings of the Society for the Study of Diseases of Children, vol. ii.

British Medical Association at Oxford in 1904[1]; and he quotes sclero-cystic disease as an alleged cause of ovarian pain and attaches some importance to the existence of peritoneal adhesions, which were conspicuously absent in this case. Dr. J. Inglis Parsons,[2] in the discussion following the address, cites a case of fibroid ovary causing pain in the absence of peritoneal adhesions which ceased on removal of the offending organ. Dr. Cuthbert Lockyer furnished a careful and well-thought out contribution to the same discussion[3] on ovarian reflex pain in the area supplied by the tenth dorsal segment, the result of painful, though moveable, ovaries. Lastly, this case is typical of a condition described by Mr. Alban H. G. Doran in an admirable paper entitled "Painful and Tender Incipient Ovarian Tumours."[4]

CASE 1.—The patient, aged 43 years, married, a multipara, consulted me a year ago for menorrhagia with a profuse leucorrhœal discharge during the intervals of hæmorrhage. Incidentally she informed me that she had suffered for the past six or seven years from constant pain in the tenth dorsal area accompanied by attacks of sciatica which had been attributed to gouty neuritis. Examination revealed a small papilloma of the cervix with accompanying erosion and an ill-defined resistance in the left pelvis. Removal of the papilloma for histological examination was advised and also at the same time a thorough examination under an anæsthetic in order to clear up the condition existing in the left pelvic area. I removed the papilloma, together with a large wedge of cervical tissue, the histological report on which was that it was benign. At the time of this operation a small tumour was clearly made out in the left pelvis and was suspected to be of ovarian origin; it was freely moveable.

Three weeks afterwards Mr. Alban Doran and Mr. J. D. Malcolm, who kindly consented to see the case with me, both concurred in, and advised, removal of the tumour. I opened the abdomen and removed a small, exceedingly tense, central cystic tumour of the left ovary of about the size of a small orange. There were no peritoneal adhesions anywhere to be seen and the patient made an uneventful and uninterrupted recovery. At the present moment she is in excellent health and expresses herself as never feeling better in her life; the sciatica has entirely departed, as well as the pain in the tenth dorsal segment, after fluctuating a little, due, in my opinion, to the slight irritation set up in the pedicle by the silk ligatures which have now quite settled down.

The specimen showed, both macroscopically and microscopically, the ovarian tissue equally distended on all sides by a central cyst, the pressure of which on the nerve endings in the ovary no doubt gave rise to reflex symptoms, of which the persistent sciatica was the most distressing.

The second case is a type of the usual pressure-symptom case on both sciatic nerves, clearly one of mechanical causation. There were no reflex nervous symptoms other than those attributable to pressure on both sciatic nerves, and there was certainly no referred pain to either ovarian region (tenth dorsal area) though both tubes at the operation were found to be occluded and in a condition of multiple cystic hydatidiform degeneration. The ovaries were matted but not diseased. There were present in the pelvis numerous peritoneal adhesions connecting the bowel, tubes, and ovaries with one another and with the tumour, which was a myoma of the anterior lip of the cervix uteri of four and a half pounds weight, impacted in the pelvis and bound down with adhesions.

CASE 2.—The patient, a widow, aged 47 years, a multipara, consulted me for persistent and continued metrorrhagia. The previous history of the case was that seven years ago she had had some inflammation after her last confinement and that during the last four years she had had persistent and increasing symptoms of intense pain down both legs and cramps in her calves. She also had difficulty in obtaining adequate action of the bowels though her bladder had not caused her any trouble. She was exceedingly weak, emaciated, and anæmic as the result of the repeated uterine hæmorrhages. Examination revealed a tumour of the cervix uteri which was of about the size of a five months pregnancy. Her bladder could be felt pouched out on both sides of the tumour which was low down in the pelvis and only very slightly moveable, causing much discomfort when attempts at movement were made. Owing to the precarious condition of the patient as the result of loss of blood it was deemed advisable to endeavour to palliate matters till her condition was somewhat improved, but a further persistent and uncontrollable loss of blood occurring immediate operation was decided on. I opened the abdomen and removed with the utmost difficulty the entire uterus. It was impacted low down in the pelvis and was adherent in every direction by dense adhesions, the separation of which, and the securing of the blood-vessels, proved a formidable and lengthy task. The patient's previous condition and the necessary severity of the operation proved too much for her recuperative powers and she subsequently sank and died.

The specimen showed a large myoma of the anterior lip of the cervix encroaching upon the body of the uterus, the right and left cornua of which were clearly seen surmounting the tumour. A sulcus between the halves corresponded to the lumen of the elongated cervix which was patulous. The hæmorrhage, though profuse, was, as is common to nearly all these cases, one which proceeded from the general mucous lining of the uterus, as no focus or vessel or opening into any vessel could be found to account for the loss of blood. Palliative measures were quite futile, for the reason that the pressure on the veins of the pelvis and broad ligament led to obstruction and passive congestion of the mucosa which ultimately was so great as directly to simulate a hæmorrhage of an arterial character. This case was clearly one where the previous sciatica was purely mechanical in causation and as such forms an interesting contrast with the first case both as regards lesion, symptoms, fitness for, and ability to rally from, operation, and ultimate result.

Harley-street, W.

[1] Brit. Med. Jour., Oct. 22nd, 1904, p. 1055.
[2] Loc. cit.
[3] Loc. cit., and Practitioner, September, 1905.
[4] Journal of Obstetrics and Gynæcology, May, 1904.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

RECURRING EPISTAXIS WITH MULTIPLE TELANGIECTASES OF THE SKIN.

BY C. O. HAWTHORNE, M.D. GLASG., M.R.C.P. LOND.

IN the *Johns Hopkins Hospital Bulletin* for November, 1901, Professor W. Osler described three cases of recurring attacks of epistaxis in association with multiple telangiectases of the skin and mucous membranes; two of the patients were brothers and several other members of the same family were reported to be similarly affected. This condition is stated by Professor Osler to be an extremely rare one and his search through medical literature resulted in the discovery of only a single reference. In these circumstances it seems desirable to secure a record of every recognised case and as one has recently been under my observation I submit the following note.

The subject was a woman, aged 49 years, and the mother of nine children. Since her first pregnancy she has been aware of the presence of "red spots" on her face and also on several of the finger tips of her right hand, and from one of the latter, situated just under the free edge of the nail, bleeding, presumably as a result of slight injury, had often occurred. A mere glance at the woman's face was sufficient to show a number of bright red telangiectases scattered over both cheeks and a few were also seen on the fingers of the right hand; none were recognised elsewhere, but as the woman came to the hospital merely as a friend of one of the patients and objected to further examination the condition of the nasal and other mucous membranes could not be ascertained. In answer to inquiries bearing on her personal history she volunteered the remark that since childhood she had suffered from repeated attacks of "bleeding at the nose" and that on one occasion it had been necessary to plug the nostrils. Her father also and a sister were, so she said, troubled in the same fashion and each of these, as well as her eldest daughter, had "spots" which she recognised as similar to those present on her own face. Further, every one of her own children had had more or less numerous attacks of epistaxis

These facts are sufficient to show that the family belongs

to the group to which attention has been drawn by Professor Osler. He distinguishes the condition from hæmophilia and in reference to this it will be noted that in the present instances, as indeed in Professor Osler's own cases, victims are supplied from both sexes. Again, the woman whose condition is described above denied that spontaneous hæmorrhage, either in herself or the members of her family, ever occurred from any part other than the nose and she did not consider that there was any family disposition to bleed in excess from any slight injury. One of her finger tips, as above described, had often bled but never to an extent to cause more than temporary inconvenience.

The present record may be noted as illustrating the hereditary tendency of the condition, its incidence in both sexes, and its wide distribution over the members of the family affected.

Harley-street, W.

AN UNUSUAL CASE OF FEMORAL HERNIA.

By J. SIDNEY PEARSON, M.A., M.B. CANTAB.,
RESIDENT MEDICAL OFFICER AT ST. MARY'S HOSPITAL, PLAISTOW, E.

A BOY, aged three years, was admitted on Dec. 12th, 1905, into St. Mary's Hospital, Plaistow, for right inguinal hernia. The hernia had not been seen down nor would the usual means make it evident. However, as the mother's history was so positive and the right external ring was so large it was decided to perform a radical cure. Mr. A. E. Kennedy performed the operation but in spite of the most careful search no sac was discovered. Before sewing up the incision, however, Mr. Kennedy suggested that the anæsthetic should be discontinued and when the boy began to vomit a hernia as large as a pigeon's egg at once became evident in the femoral canal. Accordingly, a vertical incision was made downwards over this and a typical femoral hernia was isolated. The sac was ligatured and cut off and then the pectineus was sutured to Poupart's ligament and the wound was closed. The boy made an uninterrupted recovery.

The extreme rarity of this condition in male infants justifies, I think, this brief record. Undoubtedly the hernia was congenital. Both testes were, however, in the scrotum, which is not usual in this condition, where the hernia follows generally the misplaced testis. According to the mother the testes had always been normally situated.

I am indebted to Mr. Kennedy for his kind permission to publish this note.

Plaistow, E.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. MARY'S HOSPITAL.

A CASE OF CALCULOUS ANURIA.

(Under the care of Mr. W. H. CLAYTON-GREENE.)

FOR the notes of the case we are indebted to Lieutenant R. Kuper White, I.M.S.

The history of the case is briefly as follows. On Sept. 18th, 1905, the patient, a fat man, weighing 17 stones, and aged 56 years, was seized with renal colic. The attack was in every way typical; the pain was on the right side but gradually passed from the region of the kidney to the lower part of the abdomen. There was frequency of micturition and the urine at this time was loaded with blood. As far as could be ascertained there had been no typical attack previous to this one but four months before the patient had been attended for left-sided pain which was attributed to overloading of the sigmoid flexure and which entirely subsided after the exhibition of purgatives. There were no urinary symptoms. In the light of recent events it is probable that this attack of pain was produced by a stone becoming blocked in the left ureter. Mr. J. M. Barlet of Shaftesbury-avenue saw the man on the 18th and treated him for his colic but in the evening found that very little urine was being passed. He therefore ordered free purgation and gave diuretics and tincture of belladonna in the hope that the stone would be dislodged by the contractions of the ureter. No result followed. On the 22nd a catheter was passed for the first time but the bladder was found as empty as it was supposed to be. This fact is mentioned because on examining the scrotum a well-marked epididymitis was found which could not be explained as being due to the passage of instruments. On the evening of the 22nd the patient's general condition was satisfactory, the pulse was quiet (76), the temperature was 99° F., and there was little pain; the epididymitis on the right side was well marked. The renal regions were examined but nothing abnormal could be detected beyond rigidity of the right side of the abdomen. A catheter was passed into the bladder which was found empty and a rectal examination showed only a palpable prostate. It was clear, therefore, at this stage that a case of anuria had to be dealt with, the cause being in all probability a stone impacted in the ureter some little distance from the kidney. The 22nd was, moreover, the fourth day of the anuria, and as all previous treatment had been unsuccessful in moving the stone the other alternative—operation—had to be considered. The patient was naturally very averse to anything of the sort because, as he said, he felt perfectly well and he did not realise the gravity of the situation. As no preparation had been made for operating it was agreed to postpone matters till the morrow in order to try again the effects of belladonna combined with cupping over the loins.

On the following morning (Sept. 23rd), the fifth day of the anuria, as no progress had been made, the patient was taken to the theatre and under anæsthesia an examination of the bladder was made with the cystoscope. The right ureter appeared normal but the left was distended and some whitish material, which at the time it was thought might be a phosphatic stone, could be seen in the opening. It was clear, therefore, that the stone impacted on the right side was not in the region of the ureteric opening into the bladder. He was turned on to his side, after the loins had been palpated without result, and a long incision was made from the last rib well beyond the anterior superior spine. There was a good deal more bleeding than is usual in a renal case but this was attributed to the cupping. The kidney was first examined but no stone could be felt. The renal pelvis was quite free. The ureter was next picked up at the bottom of a wound several inches in depth and on tracing it down towards the pelvis a stone was felt some four or five inches from the lower pole of the kidney just above the iliac vessels. It was quite small and of about the size of a pea. The wound was well retracted and with considerable difficulty, and after the separation of surrounding structures the ureter was brought as near the surface as possible, though still lying at a depth of some six inches, and the stone was removed through a longitudinal incision. The stone was soft and broke during its removal but the walls of the ureter gripped it very tightly and it was not possible to move it either up or down. As soon as the stone had been extracted blood-stained urine welled up into the wound and the kidney was shown to be still active. A long catheter was passed down the ureter into the bladder from the incision through which the stone had been removed. There was no further obstruction. The edges of the opening in the ureter were approximated by three catgut sutures. It was thought better not to make any effort to effect a complete closure, as such treatment tends to narrow the tube, and if the duct gets blocked with clot, as often occurs, then there is further trouble until the tension is relieved. A large tube was fixed close to this ureteric opening and the lumbar wound was closed in the ordinary manner, a second tube being inserted at the posterior angle.

The progress of the case was from the first satisfactory. There were little shock after the operation and no great amount of pain. Urine flowed freely from the lumbar tubes but none was passed per urethram. A catheter withdrew some blood-stained fluid which was found to contain urea. After an initial rise the temperature fell to normal and urine was freely discharged through the wound, but on Sept. 28th the temperature again rose and continued to do so until Oct. 1st, the day on which the patient first passed urine in the natural manner. This was followed by a sudden fall

in the temperature which since that time has remained normal. This phenomenon was, it was thought, due to the rise of tension within the kidney owing to the opening in the ureter closing before the free passage through the lower part of the tube was established. There were no further complications, the daily quantity of urine passed was satisfactory, and the wound healed by first intention, except where the drainage-tubes had been inserted; these were withdrawn on Oct. 4th, and on the 20th healing was complete. Before discharge from the hospital the bladder was again examined with the cystoscope. The right ureter appeared slightly larger than normal, while the left was, as before remarked, obviously distended, and what had at first appeared to be a stone now showed as some white flakes adherent round the margins of the orifice.

Remarks by Mr. CLAYTON-GREENE.—A noteworthy feature was the bulk of the patient; he weighed 17 stones. Morris, in his excellent account of the condition of calculous anuria, mentions that the patients are usually fat. The only other case with which I personally am acquainted was admitted into St. Mary's Hospital under the care of the late Mr. A. Q. Silcock when I was acting as his house surgeon; in this instance the man—males seem more subject to the disease than females—was a person of considerable size. Unfortunately, he was not admitted until the ninth day of the anuria and the operation did not save him.

Diagnosis.—For a condition which is admittedly rare this is peculiarly simple. In most of the published cases an attack of colic has ushered in the anuria and there has been no reason to consider such causes as the acute inflammations of the kidney.

The side affected.—In this as in the other case I mentioned a marked rigidity was present on the side last affected. This point was originally alluded to by Legueu of Paris and is a very valuable observation. In the former case under anæsthesia a large mass could be felt on the left, the rigid side, and it would have been easy to suppose that this was a hydro- or pyo-nephrosis of old standing, the opposite kidney being the working one. This rigid side was, however, the one attacked at the operation and the mass was found to be a very large hypertrophied and engorged kidney and a calculus which could not be found at the time of the operation was discovered post mortem impacted below the brim of the true pelvis. In the present instance the appearance of the left ureter might have led to the conclusion that the stone was on the left side.

The epididymitis.—Whatever views may be held with regard to sympathetic inflammation of this organ in renal disease the occurrence of the epididymitis is interesting. There was no stricture, there had been no urethritis, and the stone was a long way off the bladder. The epididymitis was coincident in its appearance with the attack of colic and it gradually subsided with the disappearance of the pain; it was, moreover, on the same side as the calculus.

The previous history.—Even assuming that the attack of pain on the left side four months previously was due to the impaction of a stone in the left ureter, that was the only occasion up to the present on which there had been any symptom pointing to renal trouble. It is, I believe, more usual to get a history of repeated attacks of colic or of an illness the result of some extensive damage to one or other kidney. In this case there can be no question as to the presence of a kidney on the opposite side unless at least a ureter can open in a normal position into the bladder without a kidney.

Duration of the anuria.—The patient passed urine for the last time before the operation on Sept. 18th so that he was operated on during the fifth day of the anuria. The length of time which elapses between the onset of this symptom and operative treatment has a very important bearing upon the result of the case. In the previous instance the anuria had lasted eight days and the man never rallied from the shock, but I venture to think that the termination would have been very different had the operation been performed some days earlier. The exact number of days which may be allowed to pass before operative measures should be undertaken cannot be fixed in a definite manner. Spontaneous cure has occurred in 28 per cent. according to Legueu, secretion recommencing as late as the sixteenth day in two instances. Morris's figures are less favourable, for out of 38 cases not operated on only ten recovered, or 20 per cent. On the other hand, as the result of operation out of a total of 49 cases recovery ensued in 25, or 51 per cent. The fifth and sixth days have been taken as a rough guide to the time up to which one may fairly hope for spontaneous cure and after which operation should be undertaken with a good chance of success, but as so much will depend upon the general condition of the patient, the state of his kidneys before the anuria started, and the degree of the anuria, since life is compatible for days with an excretion of a few drachms of urine from time to time, we cannot place very much reliance on these dates. Operation has been successfully performed on the fourteenth day of anuria, but, on the other hand, death has ensued after an operation on the third day.

The operation.—The most difficult point to determine is the position of the calculus, since if it be impacted low down it is a very serious, if feasible, matter to extract it through the lumbar incision. In this case the cystoscope and the position of the patient's pain both gave evidence that the stone was high up; the x rays were useless. The question of exploring through the semilunar line was considered but dismissed at once. When the abdominal wall is as thick as it was in this patient and when there is also the increase in the mesenteric fat that so often accompanies this great bulk, it must be futile to hope to feel the ureter satisfactorily, much more to expect to be able to extract a stone from it by this route. In a thin person it is quite different. One feature of the operation which struck me very forcibly was the extraordinary resistance which the ureter offers to prolonged handling. In order to get at the stone I had somewhat vigorously to hook up the duct with my left forefinger after stripping off the surrounding tissues for some inches above and below. During the course of the operation I must have displaced the tube very considerably, but it does not appear to have had any injurious effect.

The future.—The patient has still a damaged left kidney. He is, I take it, liable at any moment even with care to another attack of colic leading on to anuria. Is there any hope of the left kidney being useful if an operation is performed upon it? Is it advisable to do anything more? These are the two questions which I have put to myself but have not been able to answer in a satisfactory manner. I may add that at the present time, nearly four months since the operation, the patient is walking about in good health, complaining occasionally of slight pain in the right side.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Capillary Circulation and Blood Pressure and the Conditions that Control Them.

A MEETING of this society was held on Jan. 9th, Sir R. DOUGLAS POWELL, Bart., the President, being in the chair.

Dr. ALEXANDER HAIG read a paper on Capillary Circulation and Blood Pressure and the Conditions that Control Them. He said that a few moments of clinical work at once showed a definite relation between capillary circulation and blood pressure. Among possible causes of this relation were either contraction of the arterioles shutting off the blood from the capillaries or obstruction in the capillaries themselves. Large arteries were always dilated in high blood pressure and as the result of chronic high blood pressure the coats of both large and small arteries were hypertrophied. The large vessels in any case were clearly engaged in overcoming pressure and the hypertrophy of the coats of these vessels (and probably both of great and small) was not the cause of high blood pressure but its result. The possibility of obstruction in the capillary circulation was considered and it was suggested that this condition might result from a change in the blood. Raynaud had pointed out that his disease was spasmodic or paroxysmal; that there was no structural defect to be found in the vessels; and that the disease might pass away and leave no trace behind it. Raynaud's disease was occasionally associated with migraine, which also was paroxysmal and was paroxysmal, as they now knew, in relation to the quantity of uric acid in the blood. He said that there was a constant relation between the amount of uric acid in the blood, the rate of the capillary circulation, and the height of the blood pressure, and

this relation could hardly be a mere chance. It was possible to control the capillary circulation by controlling uric acid and the paper dealt first with the relation between the quantity of uric acid in the blood and the rate of the capillary circulation and, secondly, with the clinical and pathological phenomena which this enabled them to understand and to control. All drugs which increased the uric acid in the blood slowed the capillary circulation; all drugs which diminished the uric acid in the blood quickened the capillary circulation. Arterio-sclerosis was always pathological and not necessarily the result of mere age as apart from disease. High blood pressure and defective capillary circulation were its chief causes. By merely touching a patient with the finger and watching the rate of return of the capillary circulation—viz., the blood pressure—they might learn the presence or absence of fever on the one hand or of diseases associated with high blood pressure on the other; and in practically all circumstances they had there a guide to the amount of uric acid in the blood. The final conclusion was that uric acid controlled the capillary circulation of the whole body throughout life and that its effect was probably mechanical and due to its presence in the blood stream, hindering the passage of the blood through the small capillaries.

Dr. F. PARKES WEBER said that Dr. Haig concluded that various symptoms (including migraine and Raynaud's phenomena) were due to mechanical obstruction in the capillary circulation caused by the presence in the blood of uric acid in colloid form. He ventured to speak in regard to this point because he had endeavoured in various patients to ascertain by actual examination of their blood what was the resistance in its flow through a capillary tube as compared to the resistance in the flow of water—that was to say, he had endeavoured to estimate the viscosity co-efficient of the blood. Since, however, venesection was nowadays rarely considered necessary, he had not yet been able to examine many specimens of blood in this way, but his results pointed to changes in the degree of blood viscosity being usually chiefly dependent on the number of blood corpuscles. In these viscosity experiments coagulation was prevented by directly collecting the blood as it flowed from the venesection wound into a glass vessel containing a little of a 50 per cent. aqueous solution of potassium citrate, 1 per cent. of this citrate solution being mixed with every 100 cubic centimetres of blood. The viscosity of the citrated blood was in each case estimated by the help of what may be termed a "viscosity tube." This tube consisted of a capillary portion, 30 centimetres long, with a bulbous portion above the capillary portion. The liquid the viscosity of which was to be estimated was sucked up by means of an indiarubber tube till the upper surface of the fluid column rose above the bulbous portion of the tube. The liquid was then allowed to fall, whilst the tube was kept in a vertical position and the time taken by the upper surface of the liquid to sink from a mark above the bulb to a mark below the bulb was carefully ascertained. For practical purposes it was convenient to compare the viscosity coefficent of blood to that of water at ordinary room temperature, taking the latter as 1. Taking the viscosity coefficient of water at 38° C. as 1 Hirsch and Beck estimated that of normal human blood at the same temperature as 5·1 and Bence as 5·4. In the blood from a case of splenomegalic polycythæmia Dr. Weber found the viscosity coefficient to be about 11·5 when there were 9,230,000 red corpuscles and 4800 white corpuscles present in the cubic millimetre of the (citrated) blood. In two other cases of splenomegalic polycythæmia he was able to ascertain that the viscosity coefficients were in the first case 11·8 and in the second case about 6·7. He stated that Lommel had recently, by Hirsch and Beck's method, found the viscosity coefficient to be over 11·0 in a case of splenomegalic polycythæmia and that Bence in another case of splenomegalic polycythæmia obtained coefficients varying from 15·9 to 20·9. In a recent case of cyanosis, probably of both chronic pulmonary and chronic cardiac origin, Dr. Parkes Weber had found the viscosity coefficient to be 6·5, when the citrated blood contained 6,350,000 red cells to the cubic millimetre. In a man under his care with great cyanosis, probably of chronic pulmonary origin, he found (April, 1905) the viscosity coefficient to be 11·8 when the citrated blood contained only 6,850,000 red cells to the cubic millimetre. Bence in three cases of cyanosis in heart disease and in one case of bronchitis with emphysema found viscosity coefficients varying from 6·93 to 8·2. In a specimen of venesection blood from a case of aneurysm Dr. Parkes Weber found the viscosity-coefficient of the citrated blood to be only 4·0 when there were only 3,662,500 red corpuscles to the cubic millimetre. These observations were, he thought, sufficient to show that the variations of the viscosity-coefficient generally depended mainly, though not entirely, on the proportion of blood corpuscles in the (circulating) blood. In conjunction with Mr. J. H. Watson, he found, for instance, that horse's plasma, artificially mixed with 2,000,000 of red corpuscles to the cubic millimetre, took 84 seconds to pass through the bulb of the "viscosity tube," whilst a sample containing 4,000,000 red corpuscles to the cubic millimetre took 110 seconds to pass through the bulb of the same tube. In conclusion, he asked Dr. Haig whether it might not be possible to employ a "viscosity tube" similar to those used in these experiments in order to investigate the actual effect of the presence of uric acid in colloid form on the viscosity of fluids (and their passage through capillary tubes). R. Burton-Opitz of New York, it might be noted, found that the viscosity of a dog's blood could be much lowered by withholding food and much raised by feeding it on a meat diet, and he also found that the rise in viscosity from meat diet was chiefly due to the increase of the number of blood corpuscles.

Mr. J. D. MALCOLM said that he had been unable to follow the reasoning by which Dr. Haig decided that the obstruction to the flow of blood was in the capillaries. He suggested that the obstruction was in reality in the arterioles and that the contraction of these arterioles was due to the irritation of the sensory nerves by the uric acid.

Dr. FRANCIS W. E. HARE said that he would like to make a few remarks upon the relation of uric acid to migraine or periodic sick headache. Dr. Haig had shown that under a steady persistence in his well-known scheme of diet, which was practically purin-free, migraine in many cases tended to recur at increasing intervals and with diminishing intensity. This fact, which did not lack ample confirmation, was consistent with the view that the amount of uric acid circulating in the blood was an essential factor in the migraine paroxysm. But there were facts which directly contravened this view. Periodic sick headache might in many cases be completely relieved and held in absolute abeyance by means of a dietary which so far from reducing largely increased the amount of uric acid circulating in the blood. This was exemplified in the following case. A stout woman, aged 35 years, had suffered from typical unilateral migraine for 15 years. The attacks occurred every fortnight or three weeks. They lasted two and sometimes three days, and were accompanied by complete anorexia and bilious vomiting. Her diet was the ordinary mixed diet. This was altered. She was given fish or meat or both at every meal, and tea, coffee, meat extracts, and green non-starchy vegetables were allowed *ad lib.*; but sugar and fats, except a little butter, were interdicted and starch foods were reduced to two or three ounces a day. To this diet she adhered strictly for six months. Throughout the whole of this period she had no trace of headache or any migrainous symptom. She then returned to her ordinary mixed diet. At the end of the first fortnight she had a typical attack of migraine identical in all details with her previous attacks and these continued to recur thenceforward at their old intervals and with their old severity. Subsequent experiment in this case showed that the intake of starchy foods could be raised to about five ounces a day without inducing migraine, but that beyond that amount attacks were again induced. Similar examples were easy to find and it must, Dr. Hare thought, be conceded that in them at any rate the purin intake, and consequently the amount of uric acid which passed through the blood on its way towards renal excretion, was not an essential factor in migraine. It might be contended that in such cases the uric acid was retained and stored extravascularly in the tissues and did not therefore flood the circulation. If this were true it would have to be admitted that the tissues have an indefinite capacity for storage. One of Dr. Hare's patients who had suffered from periodic sick headache every three or four weeks for more than 30 years had adhered to the above scheme of diet for upwards of six years. His attacks finally ceased immediately his diet was changed and he had been in perfect health ever since. It must be admitted that the migraine paroxysm was associated, as Dr. Haig has shown, with marked variations in the excretion of uric acid. But considerable evidence could be adduced to show that these

variations were mere symptoms of the attack—that they resulted from, and were in no way causative of, the paroxysm.

Dr. HAIG, in reply, said that the case just quoted was one in which the migraine was probably due to dyspepsia which had been relieved by the meat diet. He thought that uric acid might accumulate in the body to a very large extent and that in some persons it did so accumulate, converting the body into a veritable "pillar of salt."

MEDICAL SOCIETY OF LONDON.

Chronic Colitis in Children.—Bronchiectasis in Childhood.

A MEETING of this society was held on Jan. 8th, Dr. W. PASTEUR, one of the Vice-Presidents, being in the chair.

Dr. EDMUND CAUTLEY read a paper on Chronic Colitis in Children. He referred to a previous paper on an epidemic of acute colitis[1] and took the view that chronic colitis was rare in childhood and usually a sequel to an acute attack. Objecting to the loose way in which the name "membranous colitis" was used he divided cases of chronic colitis into three groups, excluding tuberculous colitis: 1. Catarrhal colitis included the so-called mucous, muco-membranous, or "membranous" colitis and was characterised by loose stools and the presence of masses of mucus, looking like slime, jelly, or white of egg; blood was usually absent. This was not a true membranous colitis. Illustrative cases were quoted. 2. Ulcerative colitis might be of two kinds, follicular and catarrhal. The former was merely a common sequel of acute ileo-colitis in infants; the latter might occur at any age; the stools were very offensive and contained blood and a variable amount of slime. 3. Membranous colitis was the rarest variety of all. This Dr. Cautley regarded as sometimes a sequel of the catarrhal variety and he illustrated it by the history of a prolonged case in which membrane was not found in the stools until six months after the onset of catarrhal colitis. In regard to diagnosis, mucus alone indicated catarrhal colitis, blood in any quantity indicated ulceration, and the difference between mucous and membranous casts could be easily detected when they had once been seen, the latter being usually indicative of membranous colitis. He was inclined to take a favourable view of the issue of chronic colitis in the young on account of the lack of post-mortem evidence in the literature of the subject. As regards treatment he laid great stress on the importance of a diet which should be nutritious in quality without leaving much waste matter (such as albumin and water); on careful nursing and general hygiene, rest in bed in severe cases, attention to the general health, and drug treatment by the mouth and the anus. He recommended salines and castor oil as the most suitable purgatives and bismuth compounds and creasote by the mouth. Irrigation of the colon with salines, boric acid, tannic acid, and silver nitrate was also advised. Finally, he mentioned the possibility of securing more efficient irrigation *viâ* the cæcum or the appendix.—Dr. PASTEUR remarked on the rarity of the case of membranous colitis in childhood narrated by Dr. Cautley. It resembled similar cases in adults with long intervals of health followed by repeated relapses, but the condition was very rare in childhood. He had no doubt that the demulcent action of oil on the mucous membrane of the bowel was very beneficial. Rectal irrigation of plain boiled water at the temperature of the body had in his experience been quite as efficacious as medicated irrigations.—Dr. C. W. CHAPMAN referred to the beneficial effects of petroleum administered internally in cases of colitis. Sulphate of copper, a remedy which had undeservedly been neglected of late years, was of the greatest use in some cases. It could also be administered for irrigation of the bowel in a strength of three or four grains to the ounce with a little opium.—Dr. A. F. VOELCKER remarked that true membranous colitis must be extremely rare in childhood. He had seen one case of pseudo-membranous colitis due to eating pineapple. In reference to the treatment of catarrhal colitis milk must be regarded as a very suitable diet if properly diluted. He referred to the case of a child who from the age of 14 months to seven years had suffered from recurrent attacks of catarrhal colitis which were only cured when the child was placed on milk suitably diluted. The beneficial effects of olive, cod-liver, and other oils were emphasised.—Dr. J. PORTER PARKINSON agreed with Dr. Cautley in regard to the inefficiency of drugs. The addition of a little soda to the water for irrigation was very useful.—Dr. CAUTLEY, in reply, said that he was not very fond of rectal irrigation in children; it was difficult and very disagreeable to the patient. He agreed that milk was a valuable diet in suitable cases.

Dr. CHARLES R. BOX read a paper on Bronchiectasis in Childhood, exclusive of those varieties which resulted from the pressure of caseous glands or the impaction of foreign bodies in the bronchi. After alluding to the various opinions which have been expressed as to the origin of honeycombed lungs of children, Dr. Box stated that an examination of specimens which he had obtained had led him to the conclusion that some of the cavities were dilated bronchioles, some were dilated atria and infundibula, and others were the result of the breaking down and discharge into bronchioles of broncho-pneumonic patches. Broncho-pneumonia, especially that form which occurred as a complication of measles, was the causal factor in the last named. The striking resemblance of these cavities to those of an ordinary saccular bronchiectasis was pointed out. From a clinical point of view cases of bronchiectasis in children might be divided into three classes—namely, cases of honeycombed lung in which there was no associated broncho-pneumonia at the time of examination and consequently the disease produced no characteristic signs; those in which broncho-pneumonia coexisted and auscultatory cavernous signs appeared during the progress of the disease; and those in which the condition was of old standing and associated with fibrosis of the lung and flattening of the chest. The remarkable variation of the physical signs and skiagraphic appearances induced in cases belonging to the last category by emptying the bronchial tubes was described. The expectoration was not usually fœtid as in adults and it was wonderful what extensive mischief could exist in some cases without much elevation of temperature. Treatment by systematic daily inversion of the patient and the administration of syrup of garlic and cod-liver oil or of creasote and maltine was advocated.—Dr. PASTEUR asked for an explanation of the fact that such a common disease as broncho-pneumonia was not more often followed by bronchiectasis.—Dr. VOELCKER agreed with Dr. Box that the honeycombed lung was entirely different pathologically from the sacculated lung of bronchiectasis. There was, however, in his (Dr. Voelcker's) view another variety of bronchiectasis in childhood which was tuberculous in origin. The origin of the first named was probably mechanical by the unbalanced air pressure—as evidenced by the smooth spherical outlines of the cavities—yet, strange to say, the condition seemed rare after whooping-cough. Its differential diagnosis during life appeared to be very difficult, the discovery mostly being revealed post mortem.—Dr. BOX replied.

[1] Transactions of the Medical Society of London, 1901, vol. xxiv., p. 206.

OBSTETRICAL SOCIETY OF LONDON.

Fibro-myoma of the Uterus undergoing Sarcomatous Change.—Pyelonephritis of Pregnancy.—Adenomatous Polypus of the Cervix.—Uterine Fibroids in Advanced Age.—Tubal Mole associated with Sarcoma of the Ovary.

A MEETING of this society was held on Jan. 3rd, Dr. W. R. DAKIN, the President, being in the chair.

Dr. W. S. A. GRIFFITH and Dr. HERBERT WILLIAMSON recorded a case of Fibro-myoma of the Uterus undergoing Sarcomatous Change. The patient, a woman, aged 56 years, was admitted into St. Bartholomew's Hospital suffering from sarcoma of the uterus. Six years previously she had attended as an out-patient at the same hospital on account of an abdominal tumour which was diagnosed as a fibro-myoma of the uterus. Post mortem the uterus was found to contain several fibro-myomata, in one of which was growing a sarcoma. Secondary deposits were present in both lungs. Dr. Griffith and Dr. Williamson discussed the various conditions under which sarcoma and fibro-myoma might co-exist in the same uterus. They pointed out the difficulty of arriving at a definite conclusion as to the frequency of the association. They found no difficulty in accepting the doctrine that a tumour originally innocent might become malignant, and concluded that the specimen shown was an example of a fibro-myoma undergoing sarcomatous change.—Dr. R. HAMILTON BELL mentioned that the case of fibro-myoma

undergoing sarcomatous change which had been shown to the society by Dr. W. W. H. Tate two months ago had been considered by the pathology committee and that it had declared itself unable to pronounce definitely in favour of the sarcomatous change. On the other hand, the pathological department of St Thomas's Hospital entertained no doubt upon the point.—Dr. HERBERT R. SPENCER said that he believed that sarcoma of the uterus was commoner than was generally supposed and that it was often difficult to distinguish from fibroid. He considered the presence of large or giant cells of considerable value in distinguishing between sarcoma and an inflamed fibroid. He mentioned two cases which at the time of operation were regarded as simple fibroids but which on subsequent examination and on the development of secondary growths proved to be sarcomatous.—Dr. WILLIAMSON, in reply, said that he agreed that when the presence of giant cells could be demonstrated the tumour was probably of a malignant nature.

Dr. W. A. MILLIGAN recorded a case of Pyelonephritis of Pregnancy in which the left kidney was affected during the second pregnancy in a woman, aged 23 years. The symptoms set in six weeks before delivery and three weeks after a large amount of pus was evacuated from the much distended pelvis and ureter of the kidney, which was slightly disorganised. The wound was drained and a gradual cure was effected. No stone could be detected and the urine was acid throughout. In a subsequent pregnancy no recurrence of the previous trouble occurred. The causation of this condition was discussed and the opinion of various writers on the subject was quoted.—Dr. R. DRUMMOND MAXWELL recorded a case in which a woman, aged 25 years, when four months pregnant with her first child was found to be passing pus in the urine. She was placed on milk diet and the symptoms subsided, so that she was allowed to return home. But in the twenty-sixth week of pregnancy she was received back into hospital with return of the same symptoms and delivery was induced without, however, effecting much improvement. A fluctuating renal swelling was then detected in the left loin. A large pyonephrotic abscess was discovered from which a considerable amount of friable calculus was removed.

Dr. F. E. TAYLOR showed microscopic sections of a Polypus springing from the Cervix Uteri. The polypus was of the size of a pigeon's egg and had been removed from a woman, aged 53 years, on account of hæmorrhage of five years' duration. Microscopically it was seen to consist of masses of glandular tissue surrounded by richly cytogenic lymph-adenoid connective tissue.—Dr. AMAND J. M. ROUTH said that he had seen several of such polypi growing from high up in the cervical canal where muscular and glandular tissues intermingled.—Dr. SPENCER said that these adeniferous fibroid polypi were not at all uncommon and he thought it a mistake to call them adenomata.

Dr. GRIFFITH related two cases of Calcified Fibroids which it had become necessary to remove on account of pressure symptoms—one in a patient, aged 73 years, and the other in a patient aged 69 years. In each case complete relief followed operation.

Dr. A. L. GALABIN showed the Left Tube containing a Mole and corresponding Ovary (which was sarcomatous) removed, together with the Appendix from the Opposite Side, from a woman, aged 46 years, who had had five children. The left ovary was nearly solid but recent section showed a few very small cysts. He thought it probable that transperitoneal migration of the ovum must have occurred.—Dr. J. S. FAIRBAIRN said that he considered that the specimen should be classed as a fibroma and not as a sarcoma of the ovary. He thought that there was ovum-bearing tissue on the outside of the tumour and, consequently, that there was no need to assume that transperitoneal migration of the ovum had taken place.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on Jan. 5th, Sir Shirley F. Murphy, the President, being in the chair.—Dr. Henry R. Kenwood read a paper on Disinfectants. The lack of uniformity of results in the early experiments had suggested the desirability of taking some one reagent of known and general efficiency and a germ of fair resistance and easily obtained and cultivated as a standard with which to compare the relative germicidal activity of others. Rideal and Walker had proposed the use of pure phenol and the bacillus typhosus in pure cultures from which to obtain coefficients of comparative efficiency. But such results were liable to be illusory, the conditions met with in practice were very different, and this very bacillus typhosus, for instance, though exhibiting little resistance in pure cultures, was very hard to kill in liquid fæces. The agent should be one that attacked living matter in preference to dead and not all indiscriminately as chlorine. It was a matter for regret that the acid perchloride of mercury was not more safe, since with no other disinfectant were the results of experiments so uniformly satisfactory. An odour was in some respects an advantage and those of izal and cyllin were less unpleasant than that of phenol while their efficacy was as great. He did not agree with those who objected altogether to the use of proprietary articles provided that their efficiency was proved by independent experiment. Dr. R. T. Hewlett (at King's College) and himself (at University College) had been carrying out a series of experiments with typhoid stools to find how far the carbolic acid coefficient might vary under practical conditions. The results did not show the mathematical sequence of those with pure cultures and the wide variation in the results obtained by them, though operating independently on the same quantities of the same materials on the same days, indicated the necessity of providing a wide margin of safety. In engineering, where the calculations were capable of far greater exactness, very wide margins of safety were allowed; much more should be allowed in the practice of disinfection where the materials, whether fæces, sputa, or other, varied so greatly. It appeared from their experiments that this should not be less than 75 per cent. over what might be found necessary to kill the organisms in a single sample of fæces. They mixed thoroughly 5 per cent. solutions of several disinfectants with 25 cubic centimetres of typhoid fæces or of urine and after half an hour inoculated therewith Durham's tubes and Conradi's plates of McConkey's bile salt medium which they incubated at from 40° to 42° C. for three days. Taking the largest amount of disinfectant that permitted of growth and carbolic acid as the standard they obtained the following coefficients with fæces and urine respectively: phenol 1·0 and 1·0, phenyl 1·1 and 2·0, izal 2·4 and 4, and cyllin the same. Then using sterile tap water and pure cultures of bacillus coli instead of fæces or urine, the coefficients were: phenol 1·0, phenyl 1·5, cyllin 3·0, and izal 4·0; and by the Rideal-Walker method, phenol 1·0, phenyl 1·2, cyllin 5·3, and izal 5·7. He did not see that the standard germ need of necessity be pathogenic provided its resistance were at least equal to that of most pathogenic organisms met with in practice. The bacillus coli, in his opinion, fulfilled all reasonable requirements, and it would be well if they could employ some standard artificial medium equally as good as fæces or sputum for the cultivation of the germ and not subject to the great variations in consistence and other characters exhibited by these. A problem of great practical importance was presented by the very different behaviour of disinfectants to different germs and in different media, of which a striking illustration was given by Andrewes who found that a particular strain of staphylococcus pyogenes aureus resisted a solution of mercuric chloride of 1 in 500 for 20 minutes, though killed in two minutes by carbolic acid 1 in 40. It was certainly a mistake to employ one and the same disinfectant to kill the bacillus tuberculosis in sputum and dust, the bacillus typhosus in fæces or urine, and the bacillus of diphtheria on the walls and floors of rooms. All were now agreed as to the comparative uselessness of sulphur fumigation, especially in rooms occupied by consumptives, and, indeed, for all purposes except that of destroying vermin. Formic aldehyde was in every way far superior, but its penetration was unfortunately limited, though its specific gravity being about the same as that of air it diffused itself very equally. Some experiments which he conducted several years ago led him to the conclusion that the initial dose was all-important and that if this were sufficiently concentrated little, if anything, was gained by prolonging the exposure beyond two or three hours, or with the modified procedure which he had since adopted, for more than one hour. He had for some years used paraform tablets volatilised in a suitable lamp in all cases of surface disinfection of rooms, though Ligner's glyco-formal vapourising apparatus had given better results in the hands of experimenters. He considered that in ordinary rooms *cubic* space might be neglected and his instructions to his sanitary inspectors were to use 20 paraform tablets to each 10 square feet or less of *floor* space, with not more than 40 tablets to each

lamp, though the method of spraying gave equally good results. Either, however, was only a part of the process of disinfection which should include, according to circumstances, washing or stripping of walls, lime-washing ceilings, and so on, and in all cases the washing of all ledges where dust might rest with soap and water and a disinfectant solution. Many persons, especially the poorer classes, objected to the removal of their property to the public disinfecting station and were likely to secrete such as they valuen which thus escaped disinfection. In this respect disinfectiod of things as they stood had its advantages. There was no doubt that saturated steam at 115° C. was the most certain and quickest agent for penetrating textile fabrics and killing the contained bacteria, though current steam at 103° to 104° C. was satisfactory provided the air in the apparatus was so far as possible exhausted. He was not aware that anyone in this country had taken advantage of the observation of Herzog and von Esmarch that the addition of formic aldehyde to steam greatly increased its germicidal action and that if a vacuum apparatus were employed steam at 80° C. with formic aldehyde sufficed to kill even the spores of anthrax. Though only by laboratory work could decisive and exact results be obtained he could not refrain from suggesting that some evidene could be furnished of the practical value of different methods, some of which were held by scientific men to be of far less efficacy than others but by which medical officers of health believed they obtained good results, if the number of secondary cases of infectious diseases, of "return" cases of scarlet fever, and so on, in a number of large towns in which different systems and methods were adopted could be collected and compared. He was well aware of the impossibility of excluding the disturbing factors of age, social conditions, density of population, and so on, but nevertheless he believed that such information might afford more or less trustworthy evidence of a practical character.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 3rd, Mr. T. Geraty being in the chair.—Dr. Reginald Alderson read a paper on General Anæsthetics and their Administration. After alluding to the importance of the subject and the frequency of accidents during their administration, he traced the evolution of their modern use, pointing out the long latent period which elapsed in the case of nitrous oxide and ether after their discovery before any practical use was made of their narcotic properties. Dealing first with nitrous oxide he emphasised the advantages of giving air or oxygen along with the gas, thus avoiding cyanosis, jactitation and other objectionable features which occurred if given pure; a longer anæsthesia was obtained in this way and the combination was better suited than gas alone for old people and young children. About 30 fatalities had been recorded by Hewitt from gas given alone. The 3-way stopcock manufactured by Barth enabled the administrator to give gas, air, or the combination at will, and to pass from one to another in a moment when desired. With regard to chloroform, various masks and inhalers were alluded to. With chloroform the number of fatalities was still surprisingly large, though only 1 in 3000 cases. Of these more than 50 per cent. occurred before the actual operation had begun and in a large proportion the heart was found to be quite healthy post mortem. Attention was drawn to the conclusions of Embley of Melbourne and especially the observations that a failure of blood pressure always preceded respiratory failure and that during the induction period the latter occurred quite as frequently *after* heart failure as before it. Difficulties under chloroform might be divided into (1) those due to asphyxial causes and (2) those due to chloroform toxæmia pure and simple. Idiosyncrasy played some part, while certain surgical procedures had a marked tendency to depress respiration reflexly. The induction period was undoubtedly the most dangerous. With regard to ether, that prepared from rectified spirit appeared to possess no real advantage over that made from methylated spirit. The open, semi-open, and closed methods of administration were alluded to and the cases unsuitable for ether were enumerated. The Ormsby inhaler had certain advantages over the Clover owing to the small bore of the latter, which, however, had recently been much improved in sundry details. Fatalities under this anæsthetic were only 1 in 16,000 cases, or less than one-fifth of the mortality-rate of chloroform. Lobar pneumonia sometimes occurred after ether and the advantages of the ether-chloroform sequence were pointed out, especially for long operations. Ethyl chloride was most valuable for short operations but inferior in point of safety to gas and its after-effects were more pronounced. Somnoform and ethyl bromide had no advantage over ethyl chloride. The latter was to some extent lethal and could not be used indiscriminately in place of gas by unskilled persons, as was sometimes supposed. Mixtures such as A.C.E. or chloroform and ether in other proportions avoided some of the disadvantages of either singly, while the proportion of fatalities due to them was intermediate between that of chloroform and ether. The chloroform-ether sequence was not to be recommended as a routine practice. The staff of the Massachusetts General Hospital found at the present time that chloroform or any mixture containing it was decidedly more dangerous than ether and hence used the latter whenever possible. In their experience gas was decidedly more trustworthy than ethyl chloride.—Mr. Geraty thought that the anæsthetic should always be chosen with reference to the particular patient. People were very unwilling to bear pain nowadays and perhaps anæsthetics were sometimes used unnecessarily.—Dr. C. H. Cattle found ether decidedly safer and it was easier to follow the different stages of anæsthesia with it.—Mr. E. J. O'Mullane, from a very large experience, strongly advocated the advantages and safety of chloroform in labour cases. With regard to operations generally the operator should never begin until the patient was properly "under."—Dr. B. R. B. Truman could not agree that chloroform was always suitable in labour or for children who often resisted violently.—Dr. F. H. Jacob thought that the lateral position usual in labour might partly account for the additional safety attributed to the anæsthetic in such cases.—Dr. F. R. Mutch spoke of the great value of the A.C.E. mixture in long abdominal operations. The high pelvic position used for many such operations enabled the patient to undergo a lengthy anæsthesia without the slightest anxiety. Raising the jaw was frequently all that was necessary to improve faulty respiration. It was the anæsthetist's province to decide when an operation should be begun or suspended. The sudden loss of consciousness and cessation of respiration with ethyl chloride were somewhat alarming.—Dr. J. W. Scott considered that there was real danger in ethyl chloride if misused. It was quite a mistake to try to secure with it an anæsthesia lasting 15 minutes for such operations as hernia. Given with a prop in the mouth, asphyxial symptoms speedily vanished as the drug was very rapidly eliminated. It was a useful preliminary to ether.—Mr. W. B. Blandy, Mr. A. R. Tweedie, and Dr. A. Fulton continued the discussion.—In reply, Dr. Alderson strongly censured the practice of telling patients there was no danger and that they were only going to have "a whiff" of chloroform. One man's experience was no guarantee as to the safety of any anæsthetic and the experience of the world generally was in favour of ether as compared with chloroform. He did not consider chloroform justifiable in dental cases and ethyl chloride should never be used where nitrous oxide would serve as well.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on Dec. 20th, 1905, Mr. W. B. Holderness, the President, being in the chair.—Mr. W. Arnold U. Thomson (Maidenhead) showed a case of Paralysis of the Left Arm in a young woman, aged 20 years. The symptoms dated from an attack of measles in childhood. The case was considered to be one of acute anterior poliomyelitis.—Dr. F. C. Tothill (Staines) showed a case of Sloughing Ulcer of the Palate, presumably of Syphilitic Nature, in a woman, aged 45 years.—Mr. J. O. Skevington (Windsor) showed the case of a man, aged 30 years, with a large Mass of Glands in the Right Groin. The diagnosis was thought to be between lymphadenoma and sarcoma.—The President showed a case of Graves's Disease in a middle-aged woman, and two heart cases, one of which presented signs involving considerable difficulty in diagnosis. There was a loud systolic murmur best heard at the aortic cartilage and the second sound was inaudible everywhere. The case was thought to be one of double aortic disease.—Dr. C. Bolton (London) read a paper entitled, "The Treatment of Heart Failure in Diphtheria." He said that the treatment of heart failure in diphtheria, to be successful, must be directed against the systemic intoxication, which killed the patient through the acute degenerative changes which it produced in the heart and its nervous regulative mechanism, and not solely against the local diphtheritic lesion. The fundamental principle to be

adopted was to give large doses of antitoxin (from 12,000 to 24,000 units) at the earliest possible date, so as to prevent these degenerative changes occurring, this principle being strongly supported both by experimental and clinical evidence. If the degenerative changes in the heart were not sufficiently extensive to kill primarily the patient they were still present, producing a latent weakness which might at any time be brought into evidence by some strain such as mental excitement or shock, sudden exertion, vomiting, respiratory paralysis, or getting up too early in the course of the disease. Such strain would cause irregularity of the pulse and cardiac dilatation, but it might also determine sudden death at any period of the disease. Mental and physical rest in its widest sense was therefore the next principle to be adopted after antitoxin had been administered. All cases must therefore be confined strictly to bed for the first three weeks of the disease, and then if no irregularity of the pulse appeared they might be allowed up. If the pulse was irregular the patient should be confined to bed for three months, as cases of sudden death had occurred after confinement to bed for two months but not at later periods. In Dr. Bolton's experience cardiac stimulants and tonics were of very little value, all drugs, such as digitalis and strychnine, acting through the vagus being contra-indicated in the early stages when the pulse was already slow from vagus irritation. Belladonna was here indicated. If the heart were already sufficiently degenerated to kill the patient all drugs were powerless and, moreover, did harm. Irregularity of the pulse and dilatation of the heart were no indications for the use of drugs acting upon the heart and these should be reserved for cases showing syncope or impending death as the result of strain at a late stage of the disease. Lantern slides were exhibited showing the changes observed in the heart muscle and also in the ganglion cells in the course of the disease.—A discussion followed in which Mr. J. Brickwell (Slough), Mr. L. H. D. Hale (Eton), Dr. R. P. Williams (Slough), and Mr. A. W. Power (Sunningdale) spoke, the last named instancing a case lately under his care in which doses of antitoxin even larger than those recommended by Dr. Bolton had been given. Alarming cardiac failure ensued in the subsequent course of his case and great benefit was apparently derived from the hypodermic injection of strychnine and the inhalation of oxygen gas.—Dr. Bolton briefly responded.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A clinical meeting of this society was held on Jan. 5th. In the absence of the President, Dr. G. P. Shuter took the chair and referred in feeling terms to the irreparable loss that the society had sustained by the sudden death of Dr. H. Campbell Pope, one of its original members.—The following cases were then shown:—Dr. S. A. Bontor: A case of apparently Pernicious Anæmia which had much improved under treatment, which consisted mainly of increasing doses of arsenic and salol.—Mr. C. B. Keetley: A case of Ruptured Quadriceps Extensor Cruris in an old man treated by suture, and also a Kidney which had been removed from a young woman for hæmorrhage due to a crushing of the organ which had been completely torn into two parts. The patient made a satisfactory recovery.—Dr. Seymour Taylor: A case of Probable Gumma of the Pons Varolii.—Dr. Phineas S. Abraham: An unusual case of Lupus Erythematosus.—Dr. Leonard Dobson: A case of Lupus which, after being very obstinate to treatment by scraping and x rays, had been much improved by kataphoresis.—Dr. E. Arthur Saunders: A case of Progressive Muscular Atrophy and also one of Rickets with an Unusual Form of Deformity of the Arms.—Mr. Aslett Baldwin: A case of Congenital Elevation of the Scapula.—Dr. Andrew Elliot: A case of Embolism of the Arteria Centralis Retinæ.—Dr. G. A. Garry Simpson: A case of Congenital Ichthyosis.—An interesting discussion followed the exhibition of most of the cases.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Jan. 5th, Mr. W. Campbell McDonnell, the President, being in the chair.—Dr David Ross showed a case of Extroversion of the Bladder in a man, aged 31 years.—Dr. T. G. Stevens read a paper on Accidental Hæmorrhage which he said was a very serious complication of pregnancy, occurring after the sixth month in a normally situated placenta and it might be directly fatal from the amount of blood lost, the patient sometimes dying undelivered. In a previously unhealthy uterus, due to congestion, subinvolution, endometritis, or nephritis, the placenta was not securely placed and from its partial detachment blood was poured out between the uterus and the placenta. The proximate cause was cessation of uterine contractions. The amount of shock and collapse was often very great, due to sudden distension of the uterus, which it very much resented. The old treatment of rupturing the membranes, giving ergot, and applying a tight binder was most unsatisfactory, as it lowered the tension inside the uterus and so encouraged hæmorrhage. In 1893, in order to excite contractions and so stop bleeding, Smyly introduced thorough and efficient plugging of the vagina and the application of a tight abdominal binder with a perineal band. It was intended for cases of external hæmorrhage where labour pains were feeble, the os not much dilated, and the membranes unruptured. The plugs were left in till strong contractions began, and if these did not come on within 24 hours the plugs were removed and others applied. Plugging caused pressure inside the uterus to equal the blood pressure, so hæmorrhage ceased, collapse was stopped, and the patient was given a chance to revive. Usually strong contractions soon occurred and the perineal band was removed to allow the uterus to expel plugs, child, and placenta. Even in concealed hæmorrhage firm plugging might prevent expansion of the uterus and so stop hæmorrhage, but in serious cases laparotomy and hysterectomy ought to be done at once.

Reviews and Notices of Books.

Lehrbuch der Physiologie des Menschen. (*Textbook of Human Physiology.*) By G. VON BUNGE. Two Vols. Second edition. Vol. I., with 67 illustrations and two plates. Pp. 436. Vol. II., with 12 woodcuts. Pp. 670. Leipsic: F. C. W. Vogel. 1905. Price 11*s.* and 17*s.* respectively.

THE first edition of this work was published in 1901. The name of Professor von Bunge is one very familiar in this country, for his chief chemical work has been translated into English. His name is a guarantee that the subject will be treated in a novel and quite characteristic way, for Professor von Bunge has his own way of looking at and interpreting facts, so that after reading one or more of the 70 lectures the reader is sure to obtain some new views and novel suggestions that do not find a place in the average textbook.

The second volume contains 36 lectures of somewhat unequal length. We mention it first because in English textbooks the subjects with which it deals are usually taken first in a course of physiology. The first is on Idealismus and Mechanismus, an obviously attractive theme. About eight lectures are devoted to foods and of these the most interesting are the one devoted to Common Salt and the one to Milk. As von Bunge is a staunch teetotaler and a strong anti-alcohol advocate the lecture on "Genussmittel" will be read with interest. According to von Bunge, "alcohol has only paralysing properties" (p. 167). "Alcohol strengthens no one, it only deadens the sense of weariness" (p. 170). Its value in disease as a slight anæsthetic and antipyretic is questioned. Tea and coffee are not looked on with approbation and "meat extract" is regarded as the least injurious of the "Genussmittel," and then to crown all "we know absolutely nothing about the action of flesh broth save that it to most people has a pleasant taste and smell," and this is regarded as a sufficient recommendation to use it. The functions of the stomach are treated in one lecture and great importance is attached to the antiseptic properties of gastric juice, indeed, perhaps more than to the hydrochloric acid-pepsin co-partnery. Nor are the anti-ferment results of Weinland omitted in the discussion on the old question so keenly set forth by John Hunter, why during life the stomach itself is not digested. One lecture is devoted to Blood and one to the Mechanics of the Circulation, which may seem to us rather too little, but von Bunge assumes an exact knowledge of anatomy and of physics. To the Respiratory Processes and

Mechanism rather more than three lectures are devoted. These lectures are excellent and suggestive, as was to be expected from so accomplished a chemist as the author.

One lecture suffices for the Kidneys and Urine but *per contra* one is devoted to Metabolism in the Liver and Glycogen, and one each to the Source of Muscular Energy, Fat Formation, Iron, Diabetes, Infection, Fever, and Ductless Glands. Perhaps the lecture on Iron is one of the most original in the series. Von Bunge and his pupils have devoted much time to the investigation of this subject. He lays stress upon the nucleo-proteid compounds of iron existing in the yelk of an egg and on the union of iron in the organic substances of our vegetable food and on the small amount of iron in milk, for it is six times less than in the minerals of the suckling. This apparent anomaly is explained by the large amount of iron present as a reserve in the child or other mammal at birth. Doubt is cast upon the supposed absorption of inorganic iron; indeed, "its assimilation is not proved and is, indeed, improbable." A fine healthy spirit of doubt and "don't believe until there is proof" pervades these pages. Amongst animal foods the one which contains most iron is blood. Hæmatin is both absorbed and assimilated. It appears that the Byzantine Kaiser, Leo VI., "the Wise" or "the Philosopher" (886-912), expressly forbade the use of blood, but a money fine covered the delinquency, so that Leo's "Verbot" or injunction fell far short of the drastic rule of the ancient law-giver, Moses. Incidentally we may quote the following: "It is obvious that it is not necessary to spend money at the apothecary's in order to buy 'Hommel's Hæmatogen' for the anæmic. A piece of 'blutwurst' will do quite as well."

This is the issue presented in the first lecture in Vol. I., "The physiology of the senses is the alpha and omega of the natural sciences. It is at once the *foundation* and the *keystone* which crowns the whole structure." 30 lectures cover this wide range and something more, for amongst these are included very characteristic lectures on Franz Joseph Gall and the Centre for Speech, Hypnotism, Hibernation, Sympathetic System, General Physiology of Muscle and Nerve, Animal Electricity, Voice and Speech, and the wide subjects of Reproduction, Heredity, and Regeneration. In this volume is reproduced Flechsig's well-known diagram of cortical localisation. We failed to find a representation of the results of Sherrington and Grünbaum, although the localisation as presented by Horsley and Beevor is reproduced (p. 218).

There are a certain novelty and freshness and interest in the presentation of the subjects, partly due to the originality of the author and no doubt partly to the fact that the instruction is set forth in lecture form. We cordially recommend the perusal of these two interesting original and suggestive volumes.

Practical Sanitary Science: a Handbook for the Public Health Laboratory. By D. SOMMERVILLE, B.A., M.D. R.U.I., D.P.H. Cantab., Lecturer in Public Health, King's College, London. London: Baillière, Tindall, and Cox. 1906. Pp. 310. Price 10*s.* 6*d.* net.

"THIS little book is a brief summary of the course of practical lecture-demonstrations given to the D.P.H. class at King's College." About 90 pages are devoted to water in many aspects—potability and hardness, residues, poisonous and metallic substances present in it, organic and oxidisable substances, nitrites and nitrates, gases, bacteriological examination, and sewage effluents. The consideration of soils, air, milk, butter, meat, cheese, disinfectants, cereals, alcohol, and preserved foods brings us to p. 248 and then we find an appendix of over 50 closely printed pages with much useful information on the preparation of standard solutions and reagents—in fact, a short epitome of the behaviour of the more common groups of the elements and their compounds and of the commoner acids. The title-page does not state the number of illustrations; it is 93. Was it necessary to devote nearly a page to an illustration (Fig. 3) showing a two foot tube, filtering apparatus, and crucible, half a page each to (Fig. 5) chemical balance and (Fig. 6) measuring flasks, cylinder, and pipettes? And there are others—e.g., Fig. 20, a large air jar and a small air jar—which might be omitted.

"The most exact bacteriological examination may wholly fail to discover a dangerous water." This statement leads the author to welcome all trustworthy scientific methods which can assist in throwing light on this problem. An account of water referring to its manifold relations to the community is comprehensive and at the same time not too extended; and the same may be said of the analysis of soils and of the air. As to cow's milk the composition given varies considerably from that tabulated by von Bunge. The chapter on Cereals is illustrated by a number of microscopic views of the starches found in these grains. The significance of the size and relative indigestibility of potato starch cells as compared with the cells of rice starch does not seem to be noticed and in the same way the relative digestibility of crust and crumb is not set forth. "Comparative compositions" may be useful but the significance ought to be explained. About two pages are devoted to "preserved foods." We should have liked a larger exposition of this subject and also of "proprietary foods for infants." The entire class of the latter is said to be "an imposition upon a credulous public."

We think that medical officers of public health will find this work both suggestive and useful.

The Diseases of Infancy and Childhood. By L. EMMETT HOLT, M.D. Third edition, revised and enlarged. London: Sidney Appleton. 1905. Pp. 1174. Price 25*s.*

THE previous editions of Dr. Holt's "Diseases of Infancy and Childhood" are so well known in this country that it is unnecessary to refer to the general lines on which the book has been arranged. Certain sections have, however, been rewritten and one or two new ones introduced in the present edition. Among the latter is one on chondrodystrophy—a disease which has recently been the subject of considerable discussion and investigation, both in this country and in America. Some excellent illustrations of the condition of the dystrophic bones are interpolated in the text and a very lucid account of what is known of its pathology is appended at the end of the section. In the chapters which are devoted to the diseases of the female genital organs the author epitomises the substance of an article which he himself published early last year in the *New York Medical Journal* on the subject of vaginitis in infants and young girls. Writing of this disease Dr. Holt observes that, contrary to general belief, the disease is a very common one and generally due to the gonococcus. Moreover, epidemics of the disease occur often in institutions and are very difficult to control or to prevent. He states that no less than four such epidemics were observed in the babies' hospital of New York between the years 1899 and 1904, in which 273 cases were reported. The carriage of the infection can generally be traced to the handling of infected children by the nurses or attendants, the poison being thus conveyed from sick children to the healthy by means of napkins, towels, sponges, bed-linen, thermometers, syringes, or bath water. Although we are not aware that epidemics of this kind are particularly common in this country at least it is as well to realise the possibilities of such outbreaks as those described by Dr.

Holt in this new edition and what he has to say on the subject is well worth the attention of the medical officers of institutions in which a number of babies or children are housed together. The author's experience goes to show that it is essential in institutions where such outbreaks have occurred to isolate not only the patients but the nurses and attendants as well, and owing to the difficulty of eradicating infection when once it has gained an entrance it has been a rule at the babies' hospital not only to make an examination on admission but routine examinations of all patients at stated intervals. Only by rigorous measures of this kind has it been found possible to eradicate or prevent the disease.

Other sections which have been subjected to radical alteration or revision are those which deal with the examination of sick children, hypertrophic stenosis of the pylorus, diarrhœal diseases, and dysentery. Dr. Holt's active association with the investigation recently conducted by the Rockefeller Institute to determine the part played by the bacillus dysenteriæ in the causation of diarrhœal diseases among children has enabled him to speak with authority and experience on this most important subject. Indeed, so full and technical is his account of the bacteriology of the various forms of summer diarrhœa that we are almost inclined to consider that this is a genuine exception to the general rule which has been observed throughout the volume—namely, of considering the requirements of practitioners rather than those of specialists. As in previous editions the space devoted to the consideration of questions affecting the nutrition of the infant is, as compared with that given to other subjects, relatively large. It is, however, entirely in accordance with the author's general attitude towards the treatment and prophylaxis of the diseases of childhood—namely, that food and feeding play a more important part than any other single factor. We find, however, that in hardly any respect has Dr. Holt altered his views on these questions since the last edition. His extended experience, however, more strongly than ever convinces him that the American or percentage method gives better results than any other with the single exception of breast feeding. On scientific grounds there cannot be any doubt that the percentage method is unrivalled for accuracy and consistency. But inasmuch as its successful application depends on such important factors as the intelligence and experience of the person who employs it, it must necessarily meet with its share of failures. As Dr. Holt says, the central feature of percentage feeding is to adapt the milk to the child's digestion at the time. If, however, the employer of the method fails to appreciate the indications for percentage modification the system can have no success. It has been urged against this modern American method that its very accuracy introduces an element of danger on the score of monotony and want of variety. If this be so, it is clearly the fault of the employer of the method and due to a want of appreciation of its inherent elasticity. If frequent changes and variety are desirable in an infant's dietary—and he would be a bold man who would challenge the truth of this principle—it is surely better to introduce definite and intentional changes on a measured and percentage basis than to depend on the inaccuracies of less trustworthy methods for changes which admittedly are desirable. Although Dr. Holt still prefers in those cases in which expense is no serious object the more accurate percentage modification of milk which alone is possible in a properly equipped dairy or milk laboratory, nevertheless for home use he continues to recommend a percentage method which depends on the dilution of "gravity cream" of varying degrees of strength, or, in other words, on the employment of so-called "top milks." This method is one which he has employed for many years and one which he considers sufficiently accurate for all practical purposes.

Although in all respects Dr. Holt's book may be accepted as a standard work of reference, nevertheless there can be no doubt that, as heretofore, its main value to readers in this country will be in the chapters which are concerned with nutrition and the scientific modifications of food to the varying requirements of infants and children in health as well as in disease.

LIBRARY TABLE.

Practical Physiology. By A. P. BEDDARD, M.D. Cantab., LEONARD E. HILL, M.B. Lond., F.R.S., J. S. EDKINS, M.B. Cantab., J. J. R. MACLEOD, M.B. Aberd., and M. S. PEMBREY, M.D. Oxon. Illustrated by numerous diagrams and tracings. Second edition. London: Edward Arnold. 1905. Pp. 503. Price 12*s.* 6*d.* net.—The first edition of this work was issued in 1902 and the changes in the present one are chiefly in the portion of the work which deals with physiological chemistry. Several new figures have been added, such as Folin's and also Shaffer's apparatus for estimating ammonia. Substantially the edition is like its predecessor and in many chapters it is identical with the first edition, especially in the experimental part. We notice that several of the woodcuts are now referred to their proper source. There has been some slight rearrangement of the matter in the chemical chapters and some few additions have been made about such subjects as cystin and the estimation of ammonia and sugar in blood. The work is one suited for those preparing for the higher examination in practical physiology but it should be stated that mingled with the description of the practical exercises there is here and there a fair amount of what may be called systematic or descriptive physiology.

Dairy Cows and the Dairy. No. 8, "Farm and Garden Handbooks." By JOHN WALKER, edited by T. W. SANDERS, F.L.S. Illustrated. London: W. H. and L. Collingridge. 1905. Pp. 146. Price 1*s.* net.—This volume is No. 8 of a series of popular handbooks on subjects connected with the cultivation of the land and the rearing of live stock. It is a practical treatise on the best breeds of dairy cows and their management and on the construction of the dairy. Instruction is also given in butter and cheese making and in the manufacture of Devonshire junket and clotted cream. The author is a farmer and a writer of wide experience on all subjects that pertain to the farm and live stock generally and his aim is to supply the small holder as well as the dairy farmer with up-to-date and thoroughly practical information. The handbook is divided into two sections, one dealing with the most profitable breeds of dairy cattle, their management and ailments, and the other with the construction of the dairy and its management. All the common ailments and diseases of dairy cattle are treated with sufficient fulness to render this part of the volume of great service to cow-keepers. We recommend the book to the notice of those members of the profession who go in for a little amateur farming and to those who have their own dairies.

Hygiene and Public Health. By B. ARTHUR WHITELEGGE, C.B., M.D. Lond., and GEORGE NEWMAN, M.D. Edin. New edition. Illustrated. London: Cassell and Co. Pp. 636. Price 7*s.* 6*d.*—We welcome the appearance of the new edition of this well-known manual. In view of the great advance in the science and practice of public health it has been most carefully revised, rearranged, and, where necessary, rewritten. During recent years many important additions have been made to the official duties of medical officers of health and a fuller application of scientific knowledge is now required from the students of preventive medicine than was previously the case. The object of this manual is to

summarise the more important practical applications of the many and constantly progressive branches of science upon which the practice of preventive medicine rests, and the book presents a concise picture of the present position for the purposes of the medical officer of health and of the student. We are glad to see that, though the work has been subjected to a thorough overhauling, it still remains comparatively small and a volume which can be classed as a comfortable book to handle. The work will, we feel sure, retain its popularity, for it tells of the most improved methods and appliances, gives the most up-to-date statistics, and fully explains the most recent legislation on sanitary questions. The excellence of the print and the paper and the small weight of the book are additional recommendations.

How to Live the Simple Life. By CALVIN PATER. London: T. Werner Laurie. Pp. 113. Price 1*s.* net.—This little book is one that deals with a question which is not only much to the fore at the present time but one which has, indeed, occupied the hours of sages and preachers of all ages. It has been the aim of the author to crystallise the wisdom of all writers on the subject into this practical guide to seekers after the simple life. The book is well written and preaches the gospel of "away with shams"—with shams in everyday life, with hypocrisy in religion—and also a gospel of "Back to the Land." The crusade of "How to Live the Simple Life" owes its origin to the widespread conviction that something is seriously wrong with the present state of society; the new crusaders' aim is to recover for the world a faith in the living spirit and to combat recognised and unrecognised materialism. Their motto is "Simplicity, Art, Aspiration," but the author says, "it might as well have been 'Simple thoughts, simple words, simple needs, simple pleasures, simple beauty.'"

JOURNALS AND MAGAZINES.

The Quarterly Journal of Microscopical Science. Edited by E. RAY LANKESTER, F.R.S., ADAM SEDGWICK, F.R.S., W. F. R. WELDON, F.R.S., and SYDNEY J. HICKSON, F.R.S. London: J. and A. Churchill. Vol. XLIX., Part 3. December, 1905. Price 10*s.* net.—The contents of this part are—1. Studies on the Turbellaria, by W. S. Haswell, F.R.S., Challis professor of biology, University of Sydney. Parts 1 and 2 with three plates. The first part of this memoir is devoted to a description of heterochærus, an acœlous turbellarian which occurs in shallow rockpools between tidal limits in Port Jackson towards high-water mark and exposed all day to the full glare of the sun. They were best examined after the action of Sabussow's modification of Kultschitzky's photoxylin-paraffin method. The largest specimens were about 4 millimetres in length and 1·5 millimetres in greatest breadth. The body is like a melon seed but is deeply excavated behind. There is no frontal organ; the colour varies greatly. Symbiotic algæ, characterised by having a distinct non-protoplasmic cell wall, form two dense strata, one dorsal and the other ventral, just within the muscular layers. There is no pharynx, but a kind of enteric cavity is present; hence Professor Haswell considers that the term acœlous is inappropriate to them and suggests the name of adelocœlous for these animals. There are three pairs of longitudinal nerve trunks. The sexual apparatus is fully described. The second part of this memoir is occupied with a description of anomalocœlus cæcus, a new type of rhabdocœle. The anatomy of these animals is exhibited in the plates. 2. Notes on the Segmentation and Phylogeny of the Arthropoda, with an account of the Maxilla in Polygenus Lagurus, by George H. Carpenter, B Sc. Lond. This memoir is chiefly occupied with a discussion on the relative probability of a monophyletic or polyphyletic origin of the arthropoda, pointing, in the author's opinion, to the probability of a monophyletic derivation of insecta, arachnids, and crustaceæ, which therefore constitute a great primary division of the animal kingdom, only remotely connected with the annelida. 3. Notes on the Maturation of the Ovum of Alcyonium Digitatum, by M. D. Hill, M.A. Oxon., assistant master at Eton College. Mr. Hill has arrived at the conclusion that the egg of alcyonium produces no proper polar bodies or any chromosomes and also that the division of the female pronucleus before the entrance of the spermatozoon is irregular and amitotic and that the female pronucleus completely disappears. 4. On Some Points in the Anatomy of the Platydesmidæ, by F. G. Sinclair, F.L.S. The author regards the platydesmidæ as an aberrant group allied to polydesmidæ. 5. Rhinosporidium Kinealyi, *n.g.nsp.* A New Sporozoon from the Mucous Membrane of the Septum Nasi of Man, by E. A. Minchin, M.A., and H. B. Fantham, B.Sc., with two plates. This organism was found in a small pedunculated tumour projecting into the vestibule of the left nasal fossa of a native in India. The authors regard it as belonging to, or closely allied to, the sub-class neosporidia of the sporozoa.

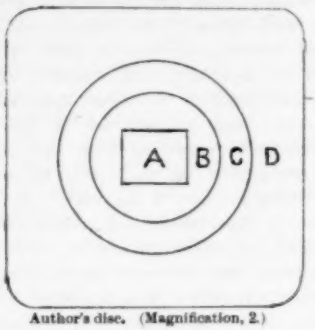
The Journal of Physiology. Edited by Sir MICHAEL FOSTER, F.R.S., and J. N. LANGLEY, F.R.S. Vol. XXXIII., No. 3. Dec. 19th, 1905. Cambridge University Press Warehouse: C. F. Clay. Price 5*s.*—This part contains the following articles: 1. The Factors of the Ureter Pressure, by V. E. Henderson, M.A., M.B. Tor., with six figures in the text. The author finds that the ureter pressure depends firstly and very largely upon the local blood pressure in the kidney; secondly, upon the constitution of the plasma; and thirdly, upon the rate of production of urine. 2. Note on the Effects of Pituitary Feeding, by W. H. Thompson, M.D. R.U.I., and H. M. Johnston, M.B. R.U.I. The authors summarise their results by stating that pituitary substance (whole gland dried at 45°–50° C.) stimulates metabolism in the dog to an increasing degree even when the dose is kept the same. The quantity of urine is but little increased but it contains more total nitrogen, more urea, and less phosphates. The body weight declines. 3. The Uniformity of the Homogentisic Acid Excretion in Alkaptonuria, by Archibald E. Garrod and T. Shirley Hele. 4. On the Estimation of Homogentisic Acid in Urine by the Method of Wolkow and Baumann, by Archibald E. Garrod and W. H. Hurtley. The authors recommend ammonia in 8 per cent. instead of 3 per cent. for the precipitation of the acid. 5. Detection of Choline in the Cerebro-spinal Fluid by means of the Polarisation-microscope, by Julius Donath, M.D., lecturer in the University of Budapest, with eight figures in the text. The method of the author consists in observing with the polarisation-microscope the double refraction and chromatic polarisation which the platino-chloride of choline exhibits. 6. New Tests for Choline in Physiological Fluids, by Otto Rosenheim, Ph.D., with two figures in the text. The author finds three tests to be available for the detection of choline: the periodide test which is a microscopic method; the alloxan test which is a colour reaction; and the bismuth test which depends on the formation of a characteristic precipitate. 7. An Investigation into the Diurnal Variation of the Body Temperature of Nocturnal and Other Birds and of a few Mammals, by Sutherland Simpson and J. J. Galbraith, with 13 figures in the text. The temperature curve of birds of diurnal habits resembles that of man but that of nocturnal animals, as the owl, is inverted, the maximum occurring at, or soon after, midnight. The mean temperature of the female is higher than that of the male in all the species examined. 8. On the Precipitins of Snake Antivenoms and Snake Antisera, by A. Hunter, Carnegie Research Fellow.

New Inventions.

A MODIFICATION OF THE THOMA-ZEISS COUNTING CHAMBER.

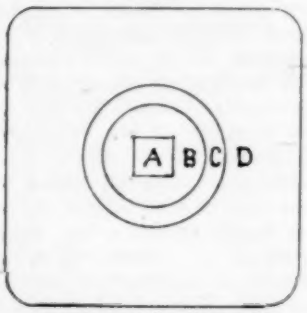
THE Thoma-Zeiss hæmocytometer is regarded by the majority of workers as the most trustworthy instrument for enumerating the red and white corpuscles of the blood. In my experience the most difficult part of the process consists in placing the correct size of drop of diluted blood on the ruled disc. If this drop be too small it does not cover the whole of the ruled area, whilst if too large it runs under the cover-glass and so vitiates the accuracy of the count. In order to obviate this difficulty I have got the firm of Zeiss to increase the size of the ruled disc as well as the width of the surrounding groove. These alterations are seen in Figs. 1 and 2. Fig. 1 = the modified

FIG. 1.



Author's disc. (Magnification, 2.)

FIG. 2.

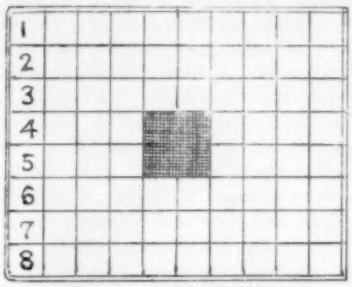


Zappert's disc. (Magnification, 2.)

counting chamber; Fig. 2 = the Zappert counting chamber. A = ruled area; B = central disc; C = groove; D = surface on which the cover-glass rests. It is often stated in text-books that none of the diluted blood should flow into the surrounding groove, but as Zeiss in a private communication says: "It does not make any difference in the accuracy of the counting if a little of the diluted blood runs into the groove C, for the latter has been specially made for the purpose of receiving the superfluous fluid." Of course, it is of fundamental importance that no fluid gets under the cover-glass. The red corpuscles are counted with a dilution of 1 in 100 or 1 in 200. The enumeration of the leucocytes is ordinarily made either with (1) a special pipette and a dilution of 1 in 10 with 0·3 to 0·6 per cent. solution of acetic acid; or (2) with the ordinary pipette and at the same time as the red corpuscles. Personally, I have always used the latter method. As a dilution of 1 in 100 with some tinted diluent is usually used it is obviously necessary to count a larger area than that in the ordinary Thoma-Zeiss chamber, which is only equal to 400 small squares. With a dilution of 1 in 100 only about eight leucocytes would be seen in the whole of the ruled area. The area may be increased by (*a*) using a specially ruled counting chamber such as the Zappert or Durham form (Fig. 4), in which there is an area equal to 3600 small squares; or (*b*) by estimating the field of vision, as so many writers have recently pointed out. I have for many years used the method of "field of vision" with the ordinary Thoma-Zeiss chamber. Here in health about two leucocytes are found in each field with a dilution of 1 in 100 and therefore before 100 leucocytes were counted about 50 fields would have to be passed over, and so a record of the number of fields as well as the number of leucocytes counted in those fields has to be made, and this is certainly troublesome. Zappert's or, as I believe it should be termed, Durham's counting chamber is a great improvement on this method. It has, however, two disadvantages: it is difficult to say when one has passed the outer margin of the ruled area; and secondly, the cross lines of the small squares are very confusing.

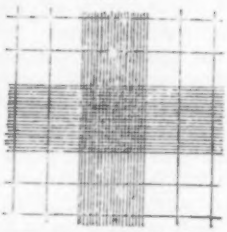
In the modified counting chamber (Figs. 1 and 3) I have somewhat altered the Zappert ruling by: 1. Increasing the number of large cells, each of which is equal to 100 small squares, to 80. 2. The outer margins of the whole ruled area are ruled double. 3. Each row of ten large squares is

FIG. 3.



Author's ruling. (Magnified 10 times.)

FIG. 4.



Zappert's ruling. (Magnified 10 times.)

numbered with a figure in the left-hand side (Fig. 3), so that no difficulty is experienced in knowing which row of large cells has been counted. 4. The ordinary 400 small squares of the Thoma-Zeiss and Zappert chamber have been retained but the cross lines of these do not extend into the surrounding large squares. The calculation with the modified chamber is of the simplest, viz.:—

$$\frac{\text{Number of corpuscles counted} \times \text{dilution (100)} \times 4000.}{\text{Number of squares in which the corpuscles were counted.}}$$

The calculation of the red blood corpuscles is exactly the same as that of the ordinary Thoma-Zeiss. The calculation of the number of leucocytes with a dilution of 1 in 100 is—

$$\frac{\text{Number of leucocytes} \times 100 \times 4000.}{8000.}$$

In other words, if the leucocytes are counted in the whole ruled area, the total number is multiplied by the dilution and divided by 2. The ease with which the chamber is charged and the leucocytes as well as the red corpuscles counted, together with the extreme simplicity of the calculation, make up largely for the increased cost of this form of chamber. It can be obtained from Zeiss's agents for 30*s*. When the leucocytes are very numerous it is obviously not necessary to go over the whole of the ruled area. As a diluting solution I still use Toison's fluid but an ideal tinted fluid has yet to be found, and I should be glad to hear of some fluid which picks out the leucocytes, does not require constant filtering, and keeps well.

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THE LANCET.

LONDON: SATURDAY, JANUARY 13, 1906

Medical Men and the General Election.

THE LANCET as a medical journal has no political opinions and our readers are in the same plight so far as their professional position is concerned, however keenly partisan for other reasons their views may be. There is, for example, no professional aspect that should be adopted in regard to fiscal reform, denominational education, or Home Rule for Ireland. A medical man is not supposed to be without views on such subjects; on the contrary, as an intellectual citizen who has received an elaborate training he may be well expected to weigh the arguments employed in the discussion of these matters with particular judgment, and in consequence to record a vote of more than ordinary discrimination; but his vote has to be given for other than medical reasons because the questions at issue have no direct medical bearing. These facts somewhat complicate the attitude which we, and our readers, have to adopt towards medical candidates for Parliamentary honours. There are several medical men coming forward as candidates at the elections now immediately upon us, and we have received a large number of letters from their supporters asking us to advocate their claims in our columns upon the simple ground that they are medical candidates and that we are a medical journal. We are unable to accede to the requests that we should promote the claims of this or that candidate because, and only because, he is a medical man, nor can we recommend any of our readers to give his vote for such a reason. The medical candidates, however distinguished in their profession, are not going to the poll as medical men, but as Liberals, Conservatives, Liberal Unionists, Nationalists, or perhaps Independents. In accordance with their place under one or other of these headings they will be elected or rejected. Their medical training gives them an enormous start in our favour, but this does not imply that the present political and constitutional problems of the day are to be relegated into a secondary position. The suggestion that all medical men should vote wherever possible for the medical candidate, *regardless* of other circumstances, is, we think, unworthy of a large-minded profession, but in general terms the medical candidate must always be an exceedingly strong one because his knowledge is the kind which our legislators urgently require and are mostly without.

We sincerely desire that the medical profession shall be amply represented in Parliament. Politics, not only domestic politics but foreign politics, revolve more and more around questions of public health. At home, for example, the physique of the nation—especially of that section which supplies the recruiting material of our navy and army—and the housing of our industrial populations are among the burning topics. They demand the earnest attention of a legislature which can only obtain trustworthy evidence upon them by giving due regard to scientific medical opinion and ascertained medical facts. In our colonial empire public health and the prevention and elimination of tropical disease have now become questions of urgent importance. No modern Minister for the Colonies would consider that he had done his duty by his position unless he was prepared to assist such of our dependencies as required it against the inroads of disease; nor would any member of a modern Government be prepared to advocate the payment of perilous Government service in unhealthy districts solely by an artificially high salary or a delusive pension scheme. Minister and permanent official, Liberal and Conservative alike, see that the greatest bar to national consolidation would be removed if life in our unhealthy dependencies could be made more secure, and the sanitation and hygienic care of our colonies is now regularly a charge upon the Colonial Office. Turning from our colonies to the world at large, all thoughtful people now see that political upheavals in one part of the world may seriously disturb public health in other parts of the world. At the present moment, and for many weeks past, fever-stricken, disease-ridden, terrified, and persecuted wretches have been fleeing across the northern face of Europe endeavouring to escape from the Russian cataclysm. It is impossible for politicians in these days to watch with folded hands the issue of these events. Pious regrets that such things should be are as useless as the cynical indifference of mediæval times. Nations nowadays have to be prepared to prevent disease whencesoever it arises, and not only to eliminate their own diseases but to deal with the diseases thrust upon them, perchance, by their neighbours. All this means that the statesman of to-day, whichever way his duties call him, whether attending to the affairs of the country at home or abroad, and whether his interest is asked in foreign or in colonial questions, may at any moment find himself in need of expert medical advice. Hence the great need for a certain number of medical men in Parliament, a point of view which we may expect the public to appreciate more and more as the spread of education opens the popular eye to the practical value of scientific medicine.

Again, because the Medical Acts require amendment in many directions we naturally desire to see medical opinions voiced in Parliament by an important number of medical men. The Medical Acts will only be amended when Parliament is sure that such amendment is for the general good, and although the fact that only national benefit can come from a well-educated and strong medical service is very clear to all our readers, Parliament will not grasp the idea unless it is often and lucidly presented to it. From the whole situation there arises the obvious dilemma—What is the medical voter to do when two candidates, one of his own profession and one a layman, seek his suffrages, and when the lay rather than the medical candidate advocates the general policy in keeping with the voter's views? To our thinking the voter must, at any rate for the present, consider the general arguments. This election is being fought upon two or three well-defined issues, while

no medical question is definitely before the electors. Time may bring medical questions to the front, and when this occurs it does not seem to us that any advantage will accrue to medical men by having this Government or that Government in power. Medical reform is no part of the new Government's policy, but the late Government neglected medical affairs, though at the Local Government Board Mr. WALTER LONG showed himself a genuine and zealous promoter of scientific views. The President of the Local Government Board may be regarded as in a sense the Minister for Medicine, and the public work that has been done by Mr. JOHN BURNS should at least have made him acquainted with the many directions in which medicine works hand in hand with the social reformer. We hope that Mr. BURNS will make use of medical opinion on either side of the House when questions of medical importance come before him; we are sure that every medical Member of Parliament, to whatever political creed he may adhere, will render scientific assistance to him regardless of all party questions.

In view of the General Election, the Medico-Political Committee of the British Medical Association has prepared a series of questions to be put by medical men to Parliamentary candidates and the questions are accompanied by memoranda showing many obvious defects in existing legislation, as it comes under the immediate notice of, or as it affects, the medical profession. The Association of Public Vaccinators and the Association of Factory Surgeons are adopting a similar course. This is an excellent way of educating the candidates in respect of many subjects of special interest to all of us, but it must be remembered that the questions can be used only to instruct the candidates; the comparatively small number of medical men on the electorate prevent our views from having any coercive influence. Nevertheless, the cross-examination of Parliamentary candidates to find out their opinions, or to provide them with opinions, upon medico-political matters may prove very valuable. If those medical men who are chosen to sit at St. Stephens on one side or other of the House form themselves into a sort of committee upon medical matters, irrespective of general politics (as they should do), they will find it much easier to obtain a hearing for the medical aspect of any particular case if there is among their fellow Members a good number to whom professional opinions, with their sound scientific reasons, are already familiar. We do not anticipate, perhaps because we have been so frequently disappointed, any prompt additions to, or amendments of, the Statute Book, so as to make our laws more in consonance with medical and scientific opinion; but we see that the occasion of the General Election may be most usefully employed in scattering the seed of medical knowledge, some of which seed is sure to germinate.

Cerebro-Spinal Meningitis.

DURING the past two years outbreaks of cerebro-spinal meningitis in epidemic form have occurred in many parts of the world; on the Continent of Europe so many were at one time reported that a considerable amount of public anxiety began to prevail regarding the disease, while even the New World did not escape, as is proved by the records of an outbreak at Minneapolis and of another at New York. During last year we had occasion to refer in leading articles and otherwise to this disease several times, and noted epidemics in Australia, Ceylon, and various other places. We are now reminded of an experience of the malady nearer home by the appearance of a report to the Local Government Board for Ireland written by Surgeon-Colonel D. EDGAR FLINN, dealing with a localised epidemic which occurred in Innishboffin Island and in the Cleggan district of Ireland, the two constituting neighbouring areas but separated from one another by ten miles of sea. The origin of this outbreak could not be traced and no cases of epidemic meningitis had been reported in Ireland since the year 1900. It is apparently the habit of this disease to exhibit a succession of periods of epidemic prevalence separated by intervals of comparative quiescence. Thus HIRSCH in his well-known work distinguished four great epidemics—namely, from 1805 to 1830, from 1837 to 1850, from 1854 to 1874, and from 1876 to 1885. It is noteworthy that the intervals of freedom are here much shorter than the periods of prevalence, since out of the 90 years thus mapped out approximately 67 were years of disease and only 13 of freedom from it. Further, sporadic cases occur at all times even in the absence of an epidemic. It would seem therefore that the infective agent is always with us but that some unknown atmospheric conditions cause it to assume increased virulence from time to time. In Ireland, according to Surgeon-Colonel FLINN'S report, the annual number of deaths from this disease between 1881 and 1898 never fell below 50, while in years of epidemic outbreak it rose to 133, 107, and 111 (1885 to 1887). Cerebro-spinal meningitis is therefore an affection with which medical men in this country may at any time be called upon to deal and is not by any means a curiosity which can be neglected for practical purposes. Yet it is a disease to which comparatively little attention is paid in most text-books of medicine.

Our knowledge of the causation of epidemic meningitis is now fairly complete. The diplococcus intracellularis, the discovery of which is generally attributed to WEICHSELBAUM but which, according to Surgeon-Colonel FLINN, was first described by LEICHTENSTERN (in 1885), is now a well-recognised organism, though in earlier days it was often confounded with the pneumococcus. Indeed, the characters of the disease which it causes suggest a close relationship with the latter, as in both ailments there is an abrupt onset with rigors, convulsions, and vomiting. Moreover, in young children, in whom the nervous phenomena of infective diseases often predominate, the diagnosis of the two conditions may be very difficult at first. In the meningeal affection, however, the pain and stiffness in the neck and the photophobia are much more pronounced than in the pulmonary condition. As we have before pointed out, the characteristic rash of epidemic meningitis, to which it owes its popular name of "spotted fever," may itself give rise to difficulties by causing confusion between this disease and other exanthemata such as typhus fever and malignant scarlet fever. Not only does herpes labialis often appear in cerebro-spinal meningitis but a petechial rash is very well marked in some epidemics. This rash differs from the rash of typhus

fever in that it usually appears suddenly without any preliminary mottling of the skin, while in scarlet fever the throat symptoms are generally prominent and some erythema usually accompanies the hæmorrhagic spots. Still, in cerebro-spinal meningitis a rash may be entirely absent or may take the form of a blotchy erythema, rendering diagnosis sometimes almost impossible. We have also drawn attention to special methods of diagnosis applicable to this form of meningitis which are afforded by examination of the patient for Kernig's sign and of the cerebro-spinal fluid for organisms. Withdrawal of the fluid from the spinal theca may show actual turbidity due to the presence of excess of leucocytes visible to the naked eye, or the specific organism may be found by microscopical methods. In cases which become at all chronic this latter test may fail but in recent cases the cocci are generally to be found lying within the cells of the cerebro-spinal fluid.

The mode of conveyance of the infection is so far unknown. Direct infection of one individual by contact with another is difficult to prove, though in times of epidemic two or more persons in the same house often suffer together. Children are the most frequent victims but adults in the prime of life are sometimes the chief sufferers, as in the outbreak among the police force in Dublin when the mortality of the disease reached the alarming figure of 80 per cent. The diplococcus has been found in the nasal mucus in some cases and it has therefore been suggested that the nose is the channel of infection but this theory is at present unproved. Sporadic cases may safely be nursed in general hospitals, but in view of the epidemic nature of the disease under unknown conditions it might be well to include it among notifiable affections and to disinfect rooms and bedding in which a patient has lain. Owing, however, to the peculiar features of cerebro-spinal meningitis which is apt to attack a number of persons in a locality almost simultaneously and to appear at distant points without any traceable connexion one with another, such prophylactic measures, while advisable on general grounds, cannot be expected to prove very effectual in stopping an outbreak. Treatment of individual patients is equally unsatisfactory. No specific serum has so far been prepared to combat the meningococcus and alleviation of symptoms is practically all that can be carried out. Morphine for the agonising pain is essential in many cases and is usually well borne. Lumbar puncture by relieving the tension within the meningeal space is also effectual in affording temporary comfort, while it has been praised by some writers as a true curative measure. A somewhat heroic extension of this procedure was suggested by SEAGER in our columns[1] as the result of experience in the Lisbon epidemic of 1902. It consists in withdrawing a considerable quantity of cerebro-spinal fluid by puncture and then injecting a 1 per cent. solution of lysol into the spinal theca. This method is still on its trial but at least one encouraging report of it has recently been made, and it is much to be hoped, considering the grave nature of the ailment and the lack of specific remedies for it, that SEAGER'S treatment may prove itself worthy of general adoption in this form of infective meningitis.

[1] THE LANCET, Nov. 1st, 1902, p. 1188.

The Spread of Small-pox from Hospitals.

WE continually envy Germany the remarkable freedom from small-pox which results from the excellence of its vaccination system, but to England there belongs at least this advantage, that the neglect of vaccination, which is permitted by our sapient Parliament as part of its sacrifice to the great doctrine of the liberty of the subject, provides for periodical discussion one of the most interesting questions in the whole domain of epidemiology—a question regarding which Teutonic medicine has no likelihood of ever obtaining the slightest practical knowledge. Small-pox hospital influence, indeed, is like SINBAD'S Old Man of the Sea—the science and practice of preventive medicine cannot get rid of it. More than 100 years ago Dr. HAYGARTH of Chester, by the exercise of a rare dialectical subtlety founded on most mistaken views as to the nature of the small-pox poison, succeeded in persuading Professor WATERHOUSE, of Boston in Massachusetts, to reject all the evidence of his own experience that variola was conveyable from a strictly isolated island hospital to persons on the nearest mainland. But when London found that all its efforts in the way of rigorous administration and limitation of cases had failed to prevent spread of small-pox from its intra-urban hospitals, and when, in consequence, it began to send all its small-pox cases to hospital ships far down the Thames, then, though London itself profited immensely, the Massachusetts experience was repeated, for the dwellers on the Essex shore, nearly half a mile from the ships, suffered from small-pox in proportion to their propinquity to the hospital. Previous to the pandemic of the early "seventies" there was little systematic hospital isolation of small-pox in this country, and among the earliest municipalities to undertake seriously this duty was the city of Glasgow which began to treat small-pox in its first municipal hospital in 1870. From Dr. J. B. RUSSELL'S collected writings recently reviewed in THE LANCET[1] it is interesting to learn how quickly suspicion began to arise that the new hospital was itself a centre of mischief, and though the first investigation in 1872 led to the provisional verdict of "Not proven" yet in the following year Dr. RUSSELL wrote: "While I am not prepared to say *how* the hospital acts, I am afraid it must be admitted that it does act in propagating the disease in the northern district." It need not be doubted that this conclusion was most disappointing to the Glasgow authorities after all the money that they had spent, but they faced the situation and set about providing a new hospital just outside the borders of their populated area. This hospital was opened in 1877 but most unfortunately it had not been placed far enough away from the city. There was not then available the teaching derivable from Mr. W. H. POWER'S classical researches regarding the influence of London hospitals, for action in Glasgow was taken before London had become really alive to its danger; and so the northern city is even now engaged in erecting a third hospital well out in the country, its second institution having

[1] THE LANCET, Dec. 16th, 1905, p. 1779.

been found on every occasion of its extensive use for small-pox to be associated with a quite exceptional prevalence of the disease in that end of the city close to which it is situated. London, on the other hand, from 1886 onwards, has removed all its cases to a floating hospital a long way off from its population, and has therefore required to go no further afield, though Orsett in Essex has had to bear a very considerable vicarious burden of small-pox.

The lessons derivable from London's experience have been very widely learned throughout the country, and sanitary authorities, while exercising to the full their English rights of grumbling and of criticising the Government, usually have accepted guidance as to the dangers of treating small-pox in intramural hospitals. The possibilities therefore of exhibition of hospital influence have greatly diminished in England. Yet they have by no means disappeared and the prevalence of small-pox in the period 1900–04 must have been watched with interest by epidemiologists in the expectation of its throwing additional light on the nature and extent of the risks which attach to hospitals. Medical officers anxious for the welfare of their districts may have been hoping against hope that by means of improved hospital administration, compulsory notification, and better sanitary organisation hospital influence would be found to have at last been got rid of; and so little was heard of it during the epidemic as to give some encouragement to those who were inclined to believe that, after all, the theory of aerial convection might have been a mistake or might, at least, have applied only to densely populated London. But on gathering together the lessons of the epidemic it is found that hospital influence has once more asserted itself and that once more aerial convection emerges as the best explanation of some of the recorded occurrences. These observations are prompted by perusal of the report of a full-dress discussion on the subject which took place at one of last session's meetings of the Epidemiological Society. The discussion began with an admirable paper by Dr. G. S. BUCHANAN of the Local Government Board (who writes with hereditary clearness and vigour), and was continued not only over two meetings but also by contributions sent in afterwards by all the members who desired to take part in the debate. And now the whole has been published and placed on sale[1] apart from the Transactions of the Society, as being of interest to a much wider circle of readers than is embraced in its membership. To indicate how thoroughly and from how many sides the subject was dealt with, the names of those who contributed to the discussion may be given in the order in which they appear in the report: Dr. C. B. KER, Dr. A. NEWSHOLME, Dr. J. NIVEN, Dr. E. W. HOPE, Dr. J. C. MCVAIL, Dr. B. A. WHITELEGGE, Dr. R. J. REECE, Dr. P. BOOBBYER, Dr. J. C. THRESH, Dr. G. REID, Dr. R. D. SWEETING, Dr. H. R. KENWOOD, Dr. A. WELLESLEY HARRIS, Lieutenant-Colonel A. M. DAVIES, R.A.M.C., Dr. J. T. C. NASH, Dr. W. H. HAMER, Dr. H. T. BULSTRODE, and Dr. A. K. CHALMERS. The volume concludes with Dr. BUCHANAN'S reply. The examples of small-pox hospital influence extracted by Dr. BUCHANAN from the experiences of the epidemic period 1900–04 refer to London—that is, to its hospital ships on the Thames—Glasgow, Gateshead and Felling, Liverpool, and (negatively) Manchester. The impression created by a perusal of the debate is that little or no doubt now remains as to the reality of the spread of small-pox from hospitals, but that there is still sharp difference of opinion as to its nature and some difference also as to its frequency. The reported cases are, however, abundant enough to leave no reasonable dubiety as to the desirability of isolating not only small-pox patients but also small-pox hospitals.

That being granted, there remains only the very interesting scientific question as to the nature of the influence—whether aerial convection or personal intercourse. In most outbreaks it seems justifiable to believe that both agencies are at work, but on the Essex shore and at Felling the evidence leads towards the conclusion that the atmosphere must have been practically the only vehicle. Small-pox is universally acknowledged to be an air-borne disease. No one doubts that contact is unnecessary for infection from a single case treated at home. An aggregation of acute cases in hospital involves, as a mere routine of administration, the amplest practicable ventilation—the escape into the outer atmosphere of the largest possible quantity of infected air from the wards. Rising through the colder air, why should not the particles of infectious organic matter be wafted to such distances as hospital influence has been found to reach? And why should not the virus, so wafted, protected by epithelial débris, retain its vitality even longer than can be necessary for the manifestation of its infective power? [Such a hypothesis is feasible *a priori*, and seems a much better explanation of some of the recorded phenomena than the theory of personal intercourse. Indeed, as already noted, the facts regarding the Orsett union in Essex in 1901–02 and Felling in 1903–04 are hardly capable of any other explanation. The story of the latter, as told by Dr. BUCHANAN, is very striking. The urban district of Felling adjoins Gateshead and the Gateshead hospital is situated near the boundary line. Traffic to and from the hospital is all from Gateshead. Felling cases go to a hospital of their own, and no convenient route from the affected part of Felling passes the Gateshead hospital which is situated on out-of-the-way rising ground. Yet the Felling small-pox epidemic mainly attacked not its most populous part near the Tyne but the higher and comparatively open country to the south, particularly a village less than half a mile from the Gateshead hospital, a village lying in the path of light south and south-west winds blowing across the hospital towards the village. The small-pox incidence on dwellings within half a mile of the hospital was about three and a half times that on dwellings farther away, and no one of the wards in any part of Gateshead or Felling had so high a rate of small-pox as the half-mile area, the nearest approach to that rate being experienced by a Gateshead ward which had many dwellings within a mile of the hospital. At Liverpool the way in which the use for small-pox of its three hospitals, individually and jointly, was successively associated with prevalence of small-pox in the surrounding areas, notwithstanding unquestionable excellence of administration, is most suggestive of causal connexion, and the fact that other

[1] On the Spread of Small-pox occasioned by Small-pox Hospitals during the Epidemic Period 1900–1904, and its Relation to Atmospheric Convection. By G. S. Buchanan, M.D., pp. 118, price 1s., or by post 1s. 2½d., from the Honorary Secretaries 1, Chandos-street, Cavendish-square, W.

influences must also have been at work, as is the case in every ordinary epidemic, is no evidence that the hospitals were harmless. All the points which have been raised in previous discussions on small-pox hospitals—negative instances (of which a new and interesting one was reported by Dr. KER of Edinburgh), ambulance influence, missed cases, and the like—were again debated by the Epidemiological Society, and the report of the discussion may be regarded as containing nearly all that is likely to be said on the subject until small-pox again invades the country, when fresh opportunities will arise for watching the influence of any hospitals that may still be situated within striking distance of populous places.

Annotations.

"Ne quid nimis."

HIGH POWER MICROSCOPY.

IN THE LANCET of Feb. 25th, 1905, p. 515, we published a short notice of an address on high power microscopy delivered by Mr. John W. Gordon at the Royal Institution on Feb. 17th. As the address has now appeared in pamphlet form with the requisite illustrations and diagrams[1] its details, some of which are quite novel, can be considered more fully than at the time of its delivery and will be found very interesting. It may be said to treat principally of two almost distinct branches—namely, (1) the use of dark-ground illumination with the highest powers, and (2) the combination or superposition of two compound microscopes, a device by which an unusually magnified image of an object may be obtained. For more than 60 years dark-ground illumination has been a favourite method of exhibiting certain objects under low powers; for instance, minute calcareous shells such as those of the foraminifera have a brilliant appearance when viewed with a two-inch object glass and a spot lens, the essential optical principle involved being that the object must be illumined only by rays forming a conical surface the angle of which is greater than the angle of aperture of the object glass. As this angle in the case of a high power closely approaches 180° the problem was insoluble until in quite recent years Dr. Siedentopf devised a method by which the object was illumined not by oblique rays such as those of a cone but by a very thin stratum of intense rays projected at right angles to the axis of the microscope and focussed within the field. Objects in the field then appeared bright on a dark background and could be examined with the highest powers. The method is described in THE LANCET of July 11th, 1903, p. 116. The second part of the subject—namely, the attainment of extreme magnification—is intimately connected with the optical theory of the microscope. Mr. Gordon has made a special study of more than one part of this complicated question. His views on the part played by diffraction in the formation of images will be found in THE LANCET of July 6th, 1901, p. 36, but the subject with which we are at present concerned is mainly the theoretical limit of useful magnifying power in the microscope objective and the diameter of the emergent pencil of light which enters the eye. In 1874 Helmholtz showed that the object glass of a microscope reaches the limit of its useful development in the direction of increased magnifying power so soon as, by reason of the shortening of its focal length, the diameter of the object-glass in its principal plane is reduced to something not much less than the diameter of the pupil of the observer's eye. Object glasses of less focal length than the one-tenth and one-twelfth of an inch in common use have therefore no practical advantage. Helmholtz also showed that in the microscope the emergent pencil of light has a diameter inversely proportional to the magnifying power and that it is the angle under which light from the object is received at the front face of the objective which determines the breadth of the transmitted beam. From this principle it follows that with exceptionally high magnifying powers the emergent pencil of light becomes extremely small, and then presents the serious inconvenience that the image of the object and the field in general are blurred by shadows cast not only by specks of dust on the lenses of the eye-piece but even by the corneal mucus and minute intraocular opacities. Down to the present time this defect of a highly magnified image has been thought to be insuperable but Mr. Gordon has solved the problem by an expedient at once simple and ingenious. In his microscope a small screen of finely ground glass is held in the image plane of the instrument and receives the image formed by the object. The grain of this screen scatters the light of the image over a wide angle, exactly as the magic-lantern screen scatters the light of a lantern picture, the consequence being that the image, which before meeting the screen was aerial and visible only under a very limited angle, is by the screen rendered visible under any desired angle, exactly as if it were a real object. Such an image may be subjected without impairment to high magnifying power and so the eye-lens of the ocular is replaced by a compound microscope fitted with a half-inch objective and an ocular magnifying eight times. The roughness of the ground glass is, of course, magnified as well as the image and the purpose in view would thereby be totally defeated if the screen were stationary. Mr. Gordon, however, gets over this difficulty by giving the screen a combined circular and oscillating motion in a path too complicated to be followed by the eye or to affect a photographic plate. The motion need not be rapid, for, like the roughness itself, it is magnified by the upper microscope through which it is viewed. A small electric motor mounted on a tripod beside the microscope drives a horizontal pulley on which the screen lies loosely within an eccentric ring, with the result that the screen revolves about a constantly varying centre of motion and the paths described by its various parts do not return into themselves. An extremely magnified image, suitable either for visual examination or for photography, is thus obtained on a bright background. Mr. Gordon showed his microscope at the Royal Institution on the occasion of his address; it had also been previously shown at the conversaziones of the Royal Society in May and June, 1904.

[1] Reprinted from the Proceedings of the Royal Institution of Great Britain, vol. xviii. George Barber, Furnival Press, Furnival-street, Holborn, London, E.C. Pp. 12 and three full-page plates.

THE MEDICAL EXPLORER.

BETWEEN the death of Mungo Park in 1805 and that of James Stewart of Lovedale in the year just closed there is a century of African exploration and medico-missionary achievement nothing less than "epoch-making" in the history of the Dark Continent and in that of British colonial expansion. Besides these two names there are other two worthy of all recognition in the same field, James Ormiston McWilliam and David Livingstone, the former justly remembered for his heroic conduct in the Niger expedition which concluded so tragically 70 years ago, and the latter enshrined in the admiration and reverence of his fellow men for an enlightened and philanthropic self-sacrifice rarely paralleled in "our rough island-story." All were medical men, born in North Britain, and though the last of the four, James Stewart, possessed a

THE LANCET RELIEF FUND.

For Members of the Medical Profession and their Widows and Orphans when in Distress.

——:o:——

ALMONERS.

THE PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE PRESIDENT OF THE GENERAL MEDICAL COUNCIL.

THOMAS WAKLEY, F.R.C.S. Eng.

THOMAS WAKLEY, Jun., L.R.C.P. Lond.

HON. AUDITOR.

SIR HENRY PITMAN, M.D. Camb., F.R.C.P.

——:o:——

THIS FUND will be provided year by year in the month of January to the amount of at least £300 solely by the Proprietors of THE LANCET, and administered free of cost, for the purpose of affording immediate pecuniary assistance to Medical Men, or their Widows and Orphans, *in cases of Acute Distress and Emergency*, by the grant of money by way of loans free of interest, or gifts, as the circumstances of the various cases may require.

Applicants must satisfy the Almoners of the Fund that they are qualified under the following regulation:—

* "The recipients shall be such persons as satisfy the Almoners that they possess one or other of the following qualifications—that is to say: (*a*) That the applicant holds a registered medical qualification, and that he has fallen into pressing need of immediate pecuniary relief; or (*b*) That they are persons who have been, previously to the date of application, legitimately dependent upon some person holding a registered medical qualification, and that they have pressing need of immediate pecuniary relief."

(*In the case of Widows and Orphans, in order to come within the scope of the Fund, the death of the Husband or Father must have been of recent occurrence.*)

To ensure the utmost despatch, the "Application Form" upon the other side should be filled up and forwarded (in an envelope superscribed "THE LANCET Relief Fund") to the Secretary, Mr. CHARLES GOOD, THE LANCET Offices, Strand, London, W.C.

The application *must* be accompanied by two separate Testimonials (originals, not copies)—one from the Clergyman of the Parish or other resident Minister of religion, and one from a registered Medical Practitioner. Each Testimonial *must* state—(1) that the application addressed to the Almoners has been read, (2) how long the writer has known the applicant; (3) that the writer believes the statements made by the applicant to be perfectly truthful, and such as may be acted upon without further inquiry; and (4) *may* state any other particulars that the writer desires to place before the Almoners.

Testimonials written for the Almoners of the Fund will in no case be returned.

Private and Confidential.

APPLICATION FORM.

To the Almoners of The Lancet Relief Fund.

The applicant should here state shortly:—

1. The nature of the emergency that has arisen.

   (*In the case of Widows and Orphans the full names and date of death of the Husband or Father must be given.*)

2. The circumstances out of which it has arisen.

3. The amount of the grant desired, and whether by way of loan (free of interest) or of gift.

4. If by way of loan, state when the loan will be repaid; and from what source the funds to repay it are expected to be forthcoming.

5. Whether the applicant is entitled or able in the circumstances which have arisen to look to any other source of assistance; and if so, what is the expected nature and extent of such assistance.

6. Whether the applicant is receiving, or has received during the past six months, pecuniary aid from any Medical Charity.

7. State how the applicant is qualified to receive assistance; vide regulation * on first page.

8. Particulars of:

Applicant's age

Number in family

How many are self-supporting

How many are partially dependent

How many wholly dependent

Applicant's Signature

Address

Date

*No.*_____

THE LANCET RELIEF FUND

*Name*_____

*Address*_____

*Received*_____

*Considered*_____

*Result*_____

*Date*_____

theological as well as a medical qualification, the latter profession may well claim him as one of its most typical sons who, by the medical college that he founded and by the practical recognition that he gave of the value of medical training in missionary work, stands out as an exemplar of what that training can effect in departments other than its own. Mungo Park, we rejoice to learn from a movement in his native Selkirk, is about to receive the tribute due to his brave life and brilliant work in a permanent memorial, which will preserve his name from the oblivion which he anticipated for himself in the Virgilian line—

"Ipse *ignotus*, egens, Libyae deserta peragro."

McWilliam has left in his published account of the Niger Expedition an enduring testimony to the privations and perils which he shared so nobly with the comrades who died around him—an account of which Thackeray had a reminiscence in the fine peroration to his lecture on "the manly, the English Harry Fielding." Livingstone, when, in view of death, he murmured "leave me a place to die in," little thought of the

"Monumentum aere perennius"

accorded him in the minds and hearts of the English-speaking world—a monument even more lasting than the volume in which he told his tale with an honest "unskilled labour" which, as he grimly said, he would gladly have exchanged for the severest trials that it put on record. James Stewart, we are glad to think, will (possibly before the year is out) form the subject of a biography for which the glowing *oraison funèbre* in the *Scotsman* of Dec. 23rd, 1905, must have whetted the anticipation of the public.

NEW LAWS AND NEW MINISTERS.

OUR contemporary, the *Law Journal*, calls special attention to three important new Acts of Parliament the first administration of which has been left by the late Government to its successors. These are the Aliens Act, the Shipowners' Negligence (Remedies) Act, and the London Building Acts Amendment Act, with regard to which it may be mentioned that the second enables a judge to order the detention of a foreign ship in an English or Irish port or within three miles of the coast on it being shown that the owners are probably liable to pay damages for personal injuries to the applicant, and that the last named is mainly intended to secure the provision and maintenance of proper means of escape from fire in new buildings with upper storeys more than 50 feet above the level of the roadway or in which more than 20 people reside or work. The Aliens Act is a statute of a novel character, likely to present many difficulties in practice, and is one the operation of which will be watched with much interest. All three new statutes affect the bodily safety and welfare of the working classes of society and under a Government professing strong sympathies with these there should be every effort made to give them what in popular terms may be called "a fair show." The Home Office and the Local Government Board, under the guidance of Mr. Herbert Gladstone and Mr. John Burns respectively, will find plenty to do in carrying out a number of laws both old and new the effectiveness of which depends largely upon the spirit in which they are enforced. Many Acts of Parliament providing for the protection of the public health have come into operation since a Liberal administration has had any continued opportunity for conducting the government of the country, and in that period considerable improvement has taken place in the attitude both of the governors and of the governed towards sanitary questions. In Mr. Long, in particular, to mention one of the Presidents of the Local Government Board who have recently held office, the medical profession found one who was prepared to assist in making effective the safeguarding of the public health, and from Mr. Burns, with his record of active sympathy with the classes least able to protect themselves, the medical profession will expect no less support. Mr. Burns is a man of courage and determination, but he and some of his colleagues in the near future may find that a reputation for democratic sympathies is not without its drawbacks where interference with individual members of the democracy in their personal interests is concerned. Among the followers whose votes they are seeking are many who regard the carrying out of sanitary legislation as the invasion of their private rights and who look upon vaccination and other more recent scientific discoveries that baffle their intelligence with mistrust and abhorrence; and even among those better qualified by education to form sane opinions than the humbler members of society to whom reference has been made there are not a few to whom the term "faddist" may be applied fairly. At the outset of the new Government's career, with new and comparatively recent legislation in our mind, we express the earnest wish that the laws affecting the public health may be administered firmly and amended where necessary with intelligence and discretion, but we are not inclined to prophesy that the task will always be easy for the administrators or without its anxieties and its difficulties.

A MEDLEY OF SURGERY.

THE article by Professor E. E. Goldmann of Freiburg in Baden, which is concluded in our present issue, well deserves the title of "A Medley of Surgery" for the author passes rapidly from the zenith to the azimuth of surgery, and shows himself to be well acquainted with many diverse departments of that art. The first subject treated by Professor Goldmann is the value of skiagraphy in the examination of the frontal sinuses. A knowledge of the size and contents of the sinuses before operation should prove of immense value to the surgeon in enabling him to determine what should be done. The x rays will serve to indicate the extent of the cavities and the presence of pus will give a distinct opacity. The surgeon can operate with a much greater feeling of assurance when he possesses information obtained by means such as these than when he is compelled to rely on mere intranasal examination. The anastomoses of vessels can be shown in a very beautiful manner by injecting them with an emulsion of bismuth and oil and then taking a skiagram. The bismuth in the vessels, whether arteries, veins, or lymphatics, as the case may be, gives a well-marked shadow. In this way Professor Goldmann has shown that the arteria dorsalis penis supplies blood to the corpus spongiosum and that there is practically no vascular communication between the latter and the corpora cavernosa. These facts are of vital importance in the very modern operation of resection of the urethra for stricture, for it is possible to remove the bulbous urethra and its vessels without running any risk of causing gangrene of any portion of the penis. Professor Goldmann details his method of excision of a urethral stricture: he makes an end-to-end suture and complete continuity of the canal results; in one case eight centimetres (or more than three inches) of urethra were excised. This is a most excellent result and if time endorses Professor Goldmann's operation we shall have a valuable substitute for the older methods of treatment of severe forms of urethral stricture. Attempts to remove sarcomata of the long bones without amputating the limb have for long been regarded with little favour, for recurrence always followed any such essays. This regularity of recurrence was in great part due to the fact that it was not possible to diagnose with certainty a sarcoma of one of the long bones until it was too late to do anything but

amputate the limb. The advent of skiagraphy, however, has enabled us to make in many cases a definite diagnosis of sarcoma of bone at a much earlier stage and thus the surgeon is more justified in attempting resection. Professor Goldmann relates some cases in which he was successful in saving the limb although one of the long bones was affected with a periosteal sarcoma. In one, a boy 16 years old had a sarcoma of the tibia and of this bone more than 11 inches were excised. The fibula was then divided immediately below its head and the peripheral portion was placed in a hole bored in the upper end of the tibia so as to provide a bone for the leg. This was done five years ago and a series of skiagrams shows a very interesting effect of the operation. Not only has no recurrence ensued but the fibula has taken on the work of the tibia, for it has grown so as to approach nearly in size to the lost tibia. Further, the interosseous membrane has contracted so as to approximate the remains of the tibia and the fibula and thus to strengthen the limb. The functional utility of the leg appears to have been great. We have quoted a few of the methods and operations described by Professor Goldmann and they show the versatility of his genius; the soundness of his surgery is proved on the only true touchstone of therapeutics—the success of his treatment. We are glad that we have been enabled to lay before our readers Professor Goldmann's interesting paper.

OCCUPATION IN THE OPEN AIR.

THE advocates of fresh air for all at every possible opportunity have a very strong argument on their side in the healthy aspect of those whose callings compel them to live much in the open air. The unhealthy appearance of the drivers and stokers on the Underground Railway when it was worked by steam and also of the guards and even the attendants at the stations was notorious, but although the smoke fiend has been banished from a considerable section of the railway only a few months a considerable improvement may be observed already in the appearance of the officials concerned. Instead of presenting a dull putty-coloured complexion, as was formerly the case in so many instances, the employés on the Underground Railway are slowly but surely assuming a healthier tone and colour which bespeak a supply of purer air and consequently a healthier condition of the processes of respiration, circulation, and nutrition. The men employed on the trains and stations of the railways above ground present a healthy appearance owing to their constantly being out in the open air. Again, speaking generally, the cabman, the omnibus driver and conductor, the postman, and the policeman benefit by being obliged to be constantly outdoors. It would probably be with considerable risk to the degree of health enjoyed by these persons to transfer them suddenly to sedentary work or to an occupation which would confine them indoors. A very striking example of the healthiness of outdoor life, even in towns, is seen in the generally robust and healthy appearance of persons engaged on waterways. The Thames watermen, for example, show unmistakeable signs, so far as the face can show them, of a healthy life which is shared also by the piermaster and his staff and the captains and crews of the river steamers. These examples could obviously be multiplied and there would thus appear to be ample compensation for the occasional discomforts of outdoor life. Of course, the conditions of indoor life can be made to approach those of outdoor life by providing efficient means of ventilation, but however good ventilation may be it is seldom the equivalent of absolutely fresh or outside air. Mental factors, it is true, are concerned in the advantages accruing from taking a holiday, but a healthier condition of environment ministers powerfully also to the benefit gained at such a time. In the case of a great number of persons practically the holiday is the only time when a systematic and really effectual course of pure and fresh air can be taken, and the principle that the man engaged in a sedentary life should have greater opportunities for holidays or for obtaining fresh air than the man who pursues an active outdoor life has scientific reasoning at the bottom of it and, we need hardly add, common sense.

"OPTOLOGISTS" AND PARLIAMENT.

WE have received from a correspondent (Dr. Arthur Greene of Norwich) a timely reminder of the intention of the British Optical Association to promote a Bill in Parliament for the establishment of a new variety of semi-medical practitioner legally entitled to perform "sight-testing" and to prescribe glasses. The first Lord Lytton once described hydropathy as "an ill-assorted union between medicine and hotel-keeping," and the union between a mere suggestion of medicine and a reality of spectacle-selling would be more ill-assorted still. There has already been ample experience showing that the custom of spectacle sellers to describe themselves as "optologists," "eyesight-specialists," "refractionists," or by other fantastic titles, as well as their custom of appending "B.O.A." or other cryptic letters to their names, has led a considerable number of people to suppose them not only to be medical men but even to be medical men specially qualified to treat diseases of the eyes. We agree with our correspondent that medical electors may usefully explain the true position of this matter to the Parliamentary candidates who seek their suffrages and may thus aid in obviating the risk that a very dangerous innovation may be carried into effect in default of systematic opposition from those who are in a position to speak with authority concerning it. The vision of the community is far too valuable a national asset to be surrendered as a plaything to the so-called "optologists."

THE SOCIETY FOR THE STUDY OF INEBRIETY.

A MEETING of the above society was held on Jan. 9th in the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., when Dr. T. B. Hyslop (resident physician and medical superintendent at the Bethlem Royal Hospital) opened a discussion on the Vitality of a Nation, in the course of which he said that the innate conceit of man rendered him prone to claim for himself exemption from the universal laws of evolution and dissolution. It was open to argument, however, that just as living cells, organisms, human beings, races, and even worlds live and die, so mankind must be subject to the same universal laws. As the universe was the tomb of dead and dying worlds, so our earth was the tomb of dead empires, and there was evidence to adduce that there were restrictions to the evolution of humanity in the earth's habitable portions. Not only did races have their periods of increased virility, vitality, greatness, and subsequent dissolution, but the inoculation of a community with a virus—so to speak—which led to its greatness was followed in due course by diffusion and attenuation and this conferred immunity against further infection or regeneration. This law was exemplified in the history of every decayed race and from physical, geographical, ethnological, and psychological considerations it appeared that mankind was not only approaching the summit of attainment but was also possibly growing old. In view of the immunity against further evolution conferred upon many races which have lived and had their day, and in view of the present rapidity with which interbreeding, overlapping, coöperation, and mutual help are enabling mankind on the habitable portions of the earth to rise to the higher states of development, it appeared warrantable to assume the approach of

a crisis in mental evolution, with subsequent universal immunity against regeneration. Our race was so far civilised or, so to speak, levelled up that its limitations were becoming more fully exposed to view. Thus, were we to take a census of those who are able by their inherent powers of reasoning or thought to contribute to the further evolution of mind we should be compelled to confess to indications of retrogression. Humanity demanded survival and accumulation of the unfit on the assumption that all forms of human life were potentially for the service of God. Civilisation demanded retention and accumulation of material possessions for the ease, comfort, and benefit of mankind. And individual man demanded retention and accumulation of knowledge for the evolution of his mental faculties. In these three demands and their effects we had in reality the chief repelling factors to true development, as distinguished from growth, of the vitality of thought or reason *per se*. The rôle of alcohol in the production of decay was as potent with a nation as with an individual. At the present time, however, there existed an active wave of common sense with regard to the consumption of substances which were harmful both to the individual and to the nation, and, whilst recognising that, although much had been done already, it behoved them all to put forth increased efforts to tackle each and every individual unit and thereby to subscribe as best they might to an amelioration of one of the factors which tended to make our empire drift into premature senility and an early grave, when it was yet capable of vigorous evolution and a further amplification of its share in the boundless stores of nature.

THE ATTITUDE OF THE PUBLIC TOWARDS POST-MORTEM EXAMINATIONS.

AMONG the better educated classes of society, as among members of the medical profession, there is no longer any question as to the educational value of post-mortem examinations. The Commissioners in Lunacy, for example, are accustomed to lay stress upon the proportion of cases in which in asylum practice the cause of a patient's death has been verified by proper investigation of the body. We meet in their reports upon the institutions visited by them such remarks as "in the very creditable proportion of 95 per cent. post-mortem examination followed the deaths," or "post-mortem examinations were made in the satisfactory proportion of 91·4 per cent. of all the deaths," the implication obviously being that to perform a relatively large number of such examinations redounds to the credit of the particular asylum concerned. This, it may be noted, is not entirely a fair way of regarding the matter, since in this country the decision as to whether a necropsy is to be made or not is allowed to rest with relatives of the deceased over whose prejudices the medical officers of the asylum have little control. Roughly, it may be said that the percentage of cases in which leave for the performance of a necropsy can be obtained will vary directly as the average age of the patients concerned, for as the inmates of asylums get older not only does the number of their relatives, and therefore of possible objections, tend to diminish, but the survivors display a steadily diminishing interest in the fate of those who have ceased to share their daily round. We have had an opportunity of studying a series of answers received in response to 250 requests for leave to perform necropsies sent as part of the routine of admitting pauper patients into a certain asylum. Permission was granted in 76 cases and refused in 28, while in 146 instances either no reply at all was sent or the answer was so vague or evasive as to be indefinite. It is noteworthy, though not surprising, that the letters of a favourable character indicate the possession on the part of the writers of a higher degree of education than is displayed by the objectors. In a large number of cases an affirmative answer is professedly based on the consideration that the knowledge acquired as the result of a necropsy may be of service in the treatment of other patients, but occasionally it appears that the concession is regarded merely as an act of grace towards the medical staff. Thus one letter reads: "As you have had him so many years" in an asylum "I think you are justified." The objections are sometimes of a religious character; thus permission seems invariably to be withheld by Jews. Nine replies are manifestations of that suspicion which in the minds of the vulgar still attaches to asylums. The writers are evidently of opinion that some infamous plot is veiled by the request. Thus one says: "I cannot see your meaning in holding a post-mortem examination on my son, as you say he is in the best of health, and so I don't think it is needed"; and another: "We have not considered it yet, because he is alive and not dead"; while two announce their intention of immediately visiting the asylum to see what mischief is afoot. Probably the sentiment expressed in the reply—"It will upset very much all of us"—underlies most of the refusals, but very generally no reason at all is assigned. One parent evidently sees no occasion for any further pathological investigation than she herself has conducted. She says of her son: "His infirmity is through a scald in the temple; you will see he has no hair there"; while another appends her mark to the following apparently irrelevant statement: "Being at the present time very much put about for money and your question requiring serious consideration, I should be much obliged if you would allow me some time to think it over." On the whole, however, the replies indicate a more intelligent sympathy with scientific aims than might be expected and probably many of the waverers could be easily persuaded to give their consent if a little pressure were brought to bear upon them.

BUILDING BY-LAWS IN RURAL DISTRICTS.

WE have before us a circular letter, which has been addressed by the Local Government Board to the clerks to rural district councils, calling their attention to the model series of building by-laws for rural districts compiled by the Board in 1901 and deprecating the imposition of rules drawn from a code intended for urban districts in localities where the conditions are not of an urban nature. It is observed in the letter that "the Board are aware that there are in not a few rural districts areas possessing urban characteristics or containing considerable aggregations of rapidly growing populations for which a more comprehensive series of by-laws is desirable. Indeed, in areas of this kind the by-laws might properly and desirably approximate to those in force in urban districts. Parts of rural districts can always be separately dealt with if such areas can be suitably defined. But the Board think it probable that amongst the rural districts in which the urban model series is in force there are many parishes or other areas which cannot be said to have urban characteristics and in which the by-laws in some respects impose undue restrictions on building and are more onerous than the circumstances require." The suggestion follows that if rural districts require building regulations of a special kind owing to their approximation to urban conditions rules based upon the rural model may be supplemented by appropriate clauses drawn from the urban model. In other words, the Local Government Board points out that it is possible to adapt building by-laws to the circumstances in which they are to be applied. This seems to be an eminently reasonable proposition and it is to be hoped that the regulations which have been complained of in many places will be modified where it is possible for this to be done without their efficiency from a sanitary point of view

being impaired. The Board points out, further, that its own urban model in its latest form contains modifications and additions based upon experience and that it is framed so as to give more elasticity in the administration of the by-laws than has before been enjoyed. The Local Government Board is to be congratulated upon its desire to render the working of the by-laws necessary for the well-being of the community as little irksome as possible and it is to be hoped that the rural district councils will fall in with the suggestions in the spirit in which they have been conveyed. It is to be hoped further that those for whose guidance the by-laws are framed will appreciate the effort to meet their case and will endeavour to carry out willingly and without friction regulations which may sometimes appear arduous but which are designed for the public good. These have been rendered necessary to a great extent by the neglect of those who have built habitations for the working classes in the past to consider more than the immediate result of their action to their own pockets. It is undoubtedly the fact that more recently strict compliance with the requirements of building by-laws has in many instances involved expenditure for which the annual return naturally desired could not be expected and that this has had the effect of deterring those who otherwise would build from doing so. Such a consequence is very much to be regretted, but, at the same time, landlords in country districts, on whose behalf the letter above quoted from has no doubt been written, may possibly be induced to regard such expenditure in another light and to look upon the provision of thoroughly wholesome houses for the labourers on their estate as necessary to the prosperity of the farmers, their tenants, whose welfare is closely connected with their own, even though the actual return in rent received from the cottagers may represent little or no interest upon the capital expended. Scarcity of labour tends to render agriculture unremunerative in many districts, and as with the advance of civilisation the demand for decent houses must necessarily increase the provision of them must also have some effect in retaining the better class of worker on the land and perhaps in attracting him back to it.

THE CERTIFICATION OF PATIENTS BY GENERAL PRACTITIONERS FOR ADMISSION TO AN ASYLUM.

A CORRESPONDENT has asked us for information upon the matter of certification of a patient for admission to the county asylum by the general practitioner who is attending the patient. We understand the inquiry to refer to an individual who is not a pauper and not wandering at large but who is not under proper care and control. Such a case is dealt with under Section 13 of the Lunacy Act, 1890, and the forms used in certification are Nos. 15 and 8, as set forth in Schedule 2 of the Act. The point of practical interest to our correspondent and to general practitioners in similar circumstances is whether the medical attendant of such a patient can himself sign one of the two certificates of insanity required. The reply to this question is that justice (who must be a "judicial authority" under the Act) making the order for admission to the asylum is required by the Act to direct and to authorise any two medical practitioners whom he thinks fit to visit and to examine the alleged lunatic and to certify as to his mental state. Upon such certificates the order of admission may be made. The choice of the practitioner is therefore left to the justice and in exercising it he is presumably guided by such knowledge as he may personally possess or such information as may be given him as to the alleged lunatic and his circumstances. If the justice directs the practitioner whose patient the alleged lunatic is to examine the latter it is presumably because he is aware that the relationship of medical adviser and patient exists between them. It would therefore appear that if the patient's medical man desires to sign one of the certificates of insanity he should see that the justice is made aware of this relationship. As "any person whosoever," and not only a relieving officer or a constable, who are the usual persons to act, may, under a section mentioned, lay information before a justice to the effect that a person is deemed to be a lunatic, there is opportunity for the patient's medical adviser, either directly or indirectly through the relatives or otherwise, to acquaint the justice with his position towards the patient at the same time as the information required by law is given. The rest must be left to the justice's discretion. It is, of course, conceivable that a justice might take the suggestion of a relieving officer, who is the usual individual to lay information under the Act, as to the medical men whom he ultimately authorises to certify, and that that functionary might, for reasons of his own, ignore the patient's private medical man. The best way to avoid such a contingency would be that above indicated. There should be no difficulty in procuring the necessary forms for certification if the justice directs examination with a view thereto. The Act also gives power to the justice to make an order upon the guardians for the remuneration of the medical practitioners who certify. A further point raised by our correspondent is whether the medical superintendent of the county asylum can refuse admission to a patient who was at the time of certification under private medical care and is sent in under Section 13 upon certificates one of which is signed in the above circumstances by his medical attendant. He has been informed by the relieving officer that admission of such a case may be refused. It is absurd to suggest that admission would, or could, be refused on the above grounds. No illegality attaches to the proceeding. A patient admitted under the above section of the Act is classified in the asylum as a pauper until it is ascertained that he is entitled to be classified as a private patient.

THE DUTIES OF ARMY MEDICAL OFFICERS AND CIVIL PRACTITIONERS.

As we briefly announced in our issue of Jan. 6th, p. 56, the Director-General of the Army Medical Department has arranged for a short course of lectures and demonstrations to be given at the West London Hospital on alternate Saturdays, at 4 P.M., on Army Medical Duties, commencing on Jan. 20th. The late South African war served to demonstrate clearly amongst other things the willingness of civil practitioners to aid their military *confrères* in time of war but the services that they rendered were not to the fullest extent of their capacity by reason of their lack of special training. This was regretted by none more than by the civil practitioners themselves, though everyone knows the splendid services which they did render to the medical department of the War Office. In the unlikely but not impossible event of the civil practitioner being called upon to render medical aid on the battle-field in this country his lack of special training would considerably hamper his work. With the object of making themselves more competent in the various branches of army medical work which they might be called upon to perform in time of war a body of medical men principally resident in the west of London privately addressed to the Director-General a request that instruction in the duties of army medical officers in time of war should be provided for them and, as we have already said, the Director-General has acquiesced in their wishes. The Director-General himself has undertaken to deliver the first lecture on Jan. 20th at 4 P.M. and he will take for his subject "The Constitution of the Army: its Organisation, Government, and Staff; on the Constitution and General Scope of Duties of the Army Medical Service and on its Relation to the Branches;

its Status and Powers of Command." This course, it may be stated, has no connexion with any particular hospital or school and is open to all medical practitioners residing in the western districts of London (after communication with the honorary secretary, Mr. H. W. Chambers, Goldhawk-road, W.). The West London Hospital has been selected as the place where at least some of the lectures will be given because of the convenience of its situation for the majority of those who have already expressed a wish to attend. It should be pointed out that these lectures do not come strictly within the scope of "post-graduate" work except in the sense that all instruction received by qualified medical men is "post-graduate." The movement is therefore quite apart from the West London Post-Graduate College.

POST-GRADUATE WORK IN BERLIN.

THE Anglo-American Association, which was organised in 1903 by Dr. J. H. Honan of Berlin with the object of giving information to British and American physicians going to Berlin for post-graduate work in the university, clinics, and hospitals, and of assisting medical men in finding comfortable lodgings, has just issued its annual report and list of members for 1905. The report points out the value of this association to medical men going to Berlin for post-graduate study, especially those who know little of the German language, and the facilities which are afforded for mutual help. The association meets every Saturday evening at the Heidelberg Central Hotel Building at 7.30, where a hearty welcome is extended to all American and British physicians. The address of the President is Lützowstrasse 78, Berlin, W., to whom application for membership should be made.

FIRES AND INVALIDS.

EXCEPT possibly at sea the overmastering dangers of fire are never brought so forcibly home to us as when fire affects invalids either in a hospital or a private house. On Jan. 5th an outbreak of fire occurred in the operating theatre of Addenbrooke's Hospital, Cambridge. The wards nearest to the seat of the fire are those allotted to women and on the outbreak becoming known the whole of the staff proceeded without delay to remove those patients who were in danger. All the patients were carried out of the building by way of the emergency staircase on the outside of the building and no patient appears to be any the worse for her experience. In this instance the risks of fire were reduced to a minimum. The fire started in an uninhabited portion of the building, it was observed very soon after it commenced, willing and able helpers were at hand, and a way of escape lay perfectly open. But in another instance all these conditions were reversed. On the same day an inquest was held at Lambeth upon the body of a woman named Silbey. She was epileptic and paralysed. Evidence showed that she had been left alone before the fire. A neighbour, having her attention aroused by smoke, burst open the door and found Silbey lying on the hearth-rug. Her clothing was almost completely consumed, her right hand was charred, and she was badly burned on the chest and back. She was conscious and said that she had fallen off the chair. She was taken to St. Thomas's Hospital but died soon after admission. Probably if there had been a fireguard this painful accident would never have happened, but anyone who has much experience of the homes of the poor knows how rare it is to find a fireguard. It is a sad comment upon our modern civilisation that such a poor helpless creature as Silbey should have been obliged to be left alone. But such is the case in many an instance and in many more children of very tender years have to be left quite unattended except by children slightly older than themselves. Then it is that the unprotected fire and the flannelette clothing take their toll of victims. It is, we suppose, impossible to make the use of a fireguard compulsory, but it would be perfectly easy to prohibit the sale of inflammable flannelette, and such prohibition should, in our opinion, be enacted without delay.

ANTHRAX REGULATIONS.

THE Secretary of State for the Home Department has issued regulations in regard to the processes of sorting, willeying, washing, combing, and carding wool, goat hair, and camel hair, since these processes have been certified in pursuance of Section 79 of the Factory and Workshop Act, 1901, to be dangerous. The regulations came into force on Jan. 1st this year, with the exception of two of them which will take effect on April 1st, 1906. There are 23 regulations in all, 16 of them referring to the duties of occupiers and seven to the duties of the persons employed.

MANCHESTER MIDWIVES.

WE have received a little pamphlet containing instructions to midwives compiled by the midwives' supervising committee of the corporation of Manchester and we may say at the outset that if the midwives obey their instructions and if the patients do as the midwives tell them then puerperal septicæmia should become almost unknown. The instructions are clear and are expressed in simple language. They deal with cleanliness of person of the midwife and with cleanliness of her dwelling. Then follows a section concerning her bag and its contents. Labour and the puerperium, together with care of the child, are next considered and the last section of the instructions is concerned with precautions to be taken by midwives in cases of puerperal fever. The calling of midwife is one of the oldest in the world and if of late years its members were dirty and ignorant it may be said that they had no inducements to be anything else. Now all this is changed and there is no excuse for a midwife being either. They should now be useful without being harmful but the Central Midwives Board, which has brought about this desirable result, should now turn its attention to devising means whereby the medical man who is called in by a patient's friends at the instance of the midwife may be paid for his labours when the patients or the patient's friends are too poor to discharge their debt.

WHAT IS WHISKY?

THE proceedings in "the great whisky case" were resumed at the North London police court last Monday when the first witness was called on behalf of the defence. In the course of his evidence Mr. Robert Wallace, the general works manager of the Distillers Company, Limited, and manager of the Caledonian Distillery, Edinburgh, said that the former company owned 14 patent stills and 24 pot stills in Scotland. Their production amounted to 10,000,000 proof gallons of whisky, of which only one-twentieth part was pot still. He mentioned distilleries in Scotland in which all-malt whisky was made in the patent still. He defined whisky to be "a spirit which matures by ageing, obtained by distillation from fermented cereals and malt, more malt being used than is necessary to convert the starch into sugar." Asked in cross-examination whether if 35 per cent. of malt were used he would call the product Scotch whisky, the witness said that he was not prepared to fix the limit: and in reply to the question whether he was prepared to say that if he used the same mash in a pot still or in a patent still the result would be the same in either case, he said that it would entirely depend upon the definition of whisky. The magistrate wanted to know why the use of the pot still was continued if the same identical product can be obtained more

economically from the patent still, to which the witness replied that certain customers prefer the pot still spirit because it is more highly flavoured than the patent still spirit. The entire hearing was devoted to one witness and the proceedings were again adjourned.

THE MEDICAL DIRECTORY FOR 1906.

THE valuable Medical Directory published by Messrs. Churchill for 1906 appeared with commendable promptitude in the last week of 1905. The total number of practitioners for 1906 is 38,921, being an increase of 545 over the numbers for 1905. In respect of detailed statistics the total number of practitioners in the London List for the current year is 6438, as against 6397 in 1905; the Provincial List for England gives 16,976, as against 16,718 in 1905. The Welsh List gives 1217, as against 1236 in 1905. For Scotland the numbers are 3785, as against 3733 last year; for Ireland 2654 as against 2632. The practitioners abroad number 4668, as against 4448. The Naval, Military, and Indian Medical Services number 3165, as against 3101, while the Too Late List comprises 20 names as against 96. Wales, therefore, is the only district to show a decrease and that decrease is only 19. With regard to the contents of the Directory other than the Lists of Practitioners the abstract of the principal laws affecting the medical profession continues to be as accurate and informatory as usual. The Directory is indispensable to all medical men, and also, we may add, to most public bodies, and the publishers are to be congratulated upon the care with which it is compiled. We have noticed elsewhere a communication made to a correspondent of THE LANCET by the editors of the Medical Directory that the title M.S.A. will in future be omitted in the Directory "as this is not a medical qualification." The explanation of the omission, which seems not to have been carried into universal effect, does not quite cover the ground, as there are many titles inserted in the Directory which have no medical significance.

THE ACTIVE TREATMENT OF MUSCULAR RHEUMATISM.

IN the *Boston Medical and Surgical Journal* of Nov. 2nd, 1905, Dr. B. Cates has advocated the treatment of muscular rheumatism by exercises of the affected muscles—a method which he has used with such success that he has abandoned the use of anti-rheumatic drugs, from which he obtained little good. He first gives the patient a brisk mercurial purge which he follows by castor oil and a stomachic, regarding gastro-intestinal and hepatic disturbance as an important cause of the disease. For the exercises he recommends the use of Indian clubs rather than of dumb-bells, because with the former the muscles can be more completely and more gently exercised. The clubs must not be heavy: from one to two pound clubs are generally sufficient. The exercises should be performed naked with a bath towel around the loins, so that the muscles are untrammelled. The best time is on rising in the morning and the gauge of the length of the time is to stop as soon as the muscles feel tired. Generally from 10 to 15 minutes will suffice. After the exercises a cold bath should be taken and the skin rubbed with a rough towel until it glows. In carrying out the exercises such movements are performed as will bring the affected muscles into action. Thus when the clubs are thrown backwards over the shoulders the deltoids and scapular muscles are brought into action. In sciatica the muscles of the thigh are exercised by flexing the thighs alternately on the abdomen as if attempting to mount a high platform. Dr. Cates also lays stress on proper mastication, as he regards the habit of bolting the food as playing an important part in the causation of muscular rheumatism. Dental defects must be remedied.

THE DANGERS OF CELLULOID.

THE daily papers continue to record victims to the extreme inflammability of celluloid and still the warning is disregarded. Some years ago we showed very plainly by a few simple and practical experiments that celluloid was a very dangerous material and unfortunately the fears which we expressed as to the consequences likely to arise from its careless use have been justified by events. The apathy of the public, or a certain section of it, as regards taking precautions with this dangerously inflammable substance does not appeal to our legislative authorities or they would issue special regulations enforcing care with respect to its handling and would insist on having it branded with warning words. At an inquest in Southwark last Tuesday celluloid proved to be the origin of an outbreak of fire and probably the cause of a brave fellow's death through his futile attempts to extinguish the fiercely inflammable stuff. We learn that a naked candle was used as a light in the basement of certain premises where some celluloid was stored. "Suddenly the celluloid burst into flame." We emphatically agree with the opinion of Colonel Fox of the Salvage Corps that "it was criminal that a naked light should be allowed where celluloid was stored and it was iniquitous that such stuff should be kept in the basement of a building where girls and women were employed." Why in the name of common humanity cannot the storage of this treacherous stuff be placed under the same control as petroleum or explosives, and why should not its dangerous nature be declared in the same way as is that of highly inflammable spirit?

THE medical officer of health of the Cape Colony states that for the week ending Dec. 16th, 1905, the condition of the Colony as regards plague was as follows. No case of plague in man or other animal was discovered throughout the Colony during the week in question. As regards the Mauritius, a telegram from the Governor received at the Colonial Office on Jan. 5th states that for the week ending Jan. 4th there were 4 cases of plague and 4 deaths from the disease.

Sir John Scott Burdon-Sanderson, the late Regius Professor of Medicine in the University of Oxford, has bequeathed £2000, payable within six months of his death, which occurred on Nov. 23rd last, as an endowment for the laboratory of the pathological department of the University of Oxford. The fund is to be vested in the professors for the time being of human anatomy, physiology, and pathology, who are to have absolute discretion as to the application of the money.

A COURSE of lectures on Applied Physiology will be delivered at the Westminster Hospital Medical School by Dr. Bertram L. Abrahams, assistant physician to the hospital. The lectures, eight in number, will be delivered every Thursday afternoon at 5 P.M. from Thursday, Jan. 18th, until Thursday, March 8th inclusive; and will be open without fee to graduates and students of the University of London and to qualified medical practitioners.

IN the annotation, "Medical Matters in London Elementary Schools," which appeared on p. 45 of THE LANCET of Jan. 6th, the sense of the sentence, "Previously to the London School Board there had been no such reports," suffered by the accidental transposition of some of the words; it should have read, "Previously there had been no such reports to the London School Board."

THE Wightman lecture of the Society for the Study of Disease in Children will be delivered on Friday, May 18th,

by M. le Docteur Auguste Broca, Professeur Agrégé, surgeon to the Hôpital des Enfants-Malades, and President of the Société de Pédiatrie of Paris. The subject of the lecture will be the Diagnosis and Treatment of Appendicitis in Children.

THE Third International Congress of Medical Electrology and Radiology, which was not held at Amsterdam in 1905 as originally intended, will be held this year at Milan from Sept. 5th to 9th. Further particulars will be announced shortly. Information as to membership can be obtained from Dr. G. Herschell, 36, Harley-street, London, W.

ANNUAL REPORT FOR 1904 OF THE REGISTRAR-GENERAL FOR IRELAND.

THE closing month of 1905 brought with it, from Ireland, the annual report on the births, marriages, and deaths in 1904, for a copy of which we are indebted to Mr. Robert Matheson, C.B., the Irish Registrar-General. As the arrangement of the present report has been remodelled very much on the English pattern the important details concerning the chief causes of death in Ireland will admit of comparison with those for England and Scotland when the reports appear for those divisions of the United Kingdom.

The population of Ireland still continues to dwindle. Its natural increase by excess of births over deaths last year was 24,298, whilst the loss by emigration amounted to 36,902. A decrease of 12,604 would thus appear to have taken place in the Irish population; but against this there is a set-off in immigration, of which unfortunately no official record has been preserved; consequently the actual decrease of the population is somewhat less than the above figures would represent. The marriage-rate for 1904, which was 5·22 per 1000 of the estimated population (4,402,182) shows an increase of 0·01, as compared with that for the year 1903; it is 0·21 above the average rate for the ten years 1894-1903 and is the highest rate for any of these years. The birth-rate of 23·6 per 1000 shows an increase of 0·5, as compared with that of the previous year, and also an increase of the same amount as compared with the average in the previous decennium. The death-rate of 18·1 per 1000 is above the rate of 1903 by 0·6 per 1000 and is also above the decennial average rate by 0·1 per 1000. Mr. Matheson's comments on the system of death registration in Ireland are worthy of attentive perusal. In one respect, at any rate, the Irish system is superior to that of either England or Scotland. Thus we learn that, according to custom, valuable notes on the sanitary condition of their respective districts are systematically forwarded to the central department by the local registrars, and with regard to these the Registrar-General expresses the hope that they will receive the serious attention of the local authorities intrusted with the administration of the Public Health Acts. It appears to be a characteristic feature of Irish mortality that a large proportion of the total deaths takes place in workhouses or in workhouse infirmaries. In 1904 the proportion in the whole of Ireland averaged 13 per cent. The data for England in the same year have not yet been published, but from Sir William Dunbar's report for 1903 we learn that in the ten years 1893-1902 not more than 7·7 per cent. of the English population ended their lives in Poor-law institutions.

Since the year 1902 the arrangement of the causes of death adopted in the tables of the reports for Ireland has been assimilated to that adopted for the English and Scottish reports in the first year of the current decennium, and is based on the Nomenclature of Diseases of the Royal College of Physicians of London. Mr. Matheson avails himself with good effect of the graphic method of representing mortality statistics and prefaces that section of his report with a diagram showing the death-rate from the principal diseases and indicating by appropriate shading the diseases that are known as epidemic. Of these diseases, it appears that in 1904 whooping-cough alone was more fatal than the average in the ten years 1894-1903, the rest showing in most cases a considerably reduced fatality. With the exception of the years 1894-95 and 1903 Ireland was almost free from mortality by small-pox throughout the last decade, and in 1904 the provinces of Leinster and Munster escaped entirely. In the Irish reports particulars concerning the vaccination of cases that have terminated fatally are given with commendable precision, which is more than can be claimed in all cases for the reports in this country. Thus, of the 16 persons whose deaths occurred in 1904, four were vaccinated in infancy only, ten were unvaccinated, and the condition as to vaccination of the remaining two was considered doubtful. Measles accounted for a mortality of 12 per 100,000 living at all ages, which is lower than the average rate by 5. Scarlet fever was fatal in little more than half the average proportion and typhus fever appears to be rapidly disappearing from that country which in past years has been known as the home of this disease. Prior to the year 1889 the mortality from influenza was not a chief feature in Irish vital statistics, but ever since 1890 (in which year the disease first appeared in epidemic proportions on this side of the Channel as well) the mortality from influenza has become a formidable although irregular factor in the mortality of Ireland. The deaths from this disease in 1904 were 1184 in number and were far more numerous than the deaths from any of the common epidemic diseases, whooping-cough alone excepted. In Ireland, as in England, whooping-cough exhibits this peculiarity in that it is considerably more fatal to female than to male children. In 1904 this disease was much more fatal than the average, its mortality being equal to a rate of 35 per 10,000 living at all ages, as compared with 26, the mean rate in the ten preceding years.

The mortality from diphtheria (including membranous croup) was much below the average, the rate, 7·2 per 10,000, being little above the minimum recorded in Ireland in any year of the past ten. As in this country so in Ireland the mortality from enteric fever seems to be steadily declining. The rate in 1904 was only 1·09 per 10,000, which is the lowest rate on record and is below the average in England and Wales. Diarrhœal diseases were fatal in the proportion of 3·0 per 10,000 of the population or 6 per 10,000 below the decennial average. Following the practice of the English Register Office, Mr. Matheson now includes under the head of "diarrhœal diseases," in addition to the deaths returned as from "diarrhœa," all deaths referred to epidemic diarrhœa and infective enteritis, as well as dysentery, and from the returns it would appear that in Ireland, not less than in England, the infective character of infantile diarrhœa is coming to be recognised generally. The deaths from pneumonia (another definitely infective disease) were somewhat more fatal than the average, the rate being equal to 8·5 per 10,000 living, as compared with 7·9 per 10,000 in the previous ten years.

The circumstance that the mortality from tuberculous disease in Ireland is increasing, although it is steadily decreasing in England, has led the Irish Registrar-General to devote especial care to the preparation of statistics of tuberculosis in the present report. In the section which treats of tuberculous disease he writes: "It is a grave responsibility which devolves on me to report to your Excellency that the death-rate from the aggregate of all forms of tuberculous disease has again reached the maximum of 2·9 per 1000 of the population of Ireland, estimated to the 30th June, 1904." In order to give prominence to this important feature in the Irish mortality records the Registrar-General adopts an ingenious diagrammatic method, similar to that used by the late Dr. James B. Russell in his classical writings on Glasgow mortality. In the first diagram the column representing tuberculous mortality is seen to tower above the columns representing the 21 other principal causes of death. In another diagram is shown the mortality from tuberculosis in Ireland, in contrast with that of England and Scotland, in each year of the last 40. It will there be seen that although in the year 1864 the mortality in Ireland was decidedly lower than that of England, in the last few years the position has been reversed—the mortality of Ireland being to that of England in the proportion of about 28 to 18. A third diagram shows the proportion contributed to tuberculous mortality in the aggregate by the several forms of that disease. Among persons of both sexes 77 per cent. of the total is caused by pulmonary tuberculosis, 6 per cent. by tuberculous meningitis, 4 per cent. by tuberculous peritonitis (tabes mesenterica), 8 per cent. by general tuberculosis, and 5 per cent. by other forms of tuberculous disease.

Malignant disease caused a higher mortality in Ireland during 1904 than in any previous year on record, the rate being 6·94 per 10,000 of the population of both sexes. With the exception of the rates for the years 1895 and 1902, which show a slight decline as compared with the immediately preceding years, the rise in the death-rate from cancer has been progressive from 5·17 per 10,000 in 1894 to 6·94 in 1904. Among males the rate in the latter year was 6·31 and among females 7·56. As in this country, comparatively few deaths from malignant disease occur before the age of 35 years. Consequently the mortality at ages above 35 years has been calculated for the present report according to the method adopted in this country. Calculated thus, cancer mortality in 1904 was equal to 18 per 10,000 living among males and to 21 per 10,000 among females. A table is given showing the parts of the body affected with malignant disease for the year under report, the expression malignant disease being held to include the several forms carcinoma, sarcoma, and cancer not otherwise distinguished.

For several past years it has been an encouraging feature in the Irish reports that the mortality among young children is very low. In the year 1904 infantile mortality—i.e., the proportion of deaths under one year to births registered—was equal to 100 per 1000, and the proportion of deaths of children under five years to children estimated to be living at that age was equal to 37 per 1000; both these ratios are considerably below the corresponding ratios in England. As the subject of infantile mortality is now receiving a large share of attention in this country it would be interesting to know more concerning the causes responsible for the low mortality among infants in Ireland.

MEDICINE AND THE LAW.

The Sufficiency of Samples for Analysis.

A RECENT conviction before magistrates for an offence against the Sale of Food and Drugs Act was quashed by the Divisional Court shortly before the Christmas holidays upon what must certainly be regarded as an objection fairly taken. As is well known, the goods suspected have to be divided into three parts, one of which is removed by the purchaser for analysis, another retained by him for production at the hearing and if necessary for analysis in the Government laboratory, while the third is retained by the vendor. In the case in question the subject of complaint was brandy and whereas the part sent to the public analyst amounted to five ounces of the doubtful spirit, neither of the other portions contained more than two or three ounces. The defendant's analyst objected that this was not enough for him and without there being need to discuss what amount of a particular article of food or drink may be sufficient for such a purpose it is clear that the prosecutor and defendant must stand upon an equal footing and that if the Government analyst is to be called upon for his views he must not be at a disadvantage as compared with the public analyst. Other points were raised in this case as to whether it was necessary for the magistrates to find what had actually been the material from which the alleged patent still spirit sold had been distilled, and also as to whether an error in the analyst's certificate could be corrected by verbal evidence from the analyst at the hearing. The conviction, however, was annulled upon the point mentioned above and these other matters were not decided. Incidentally some discussion took place as to the old question, "What is brandy?" and the want of a legal definition. With regard to this the Lord Chief Justice and Mr. Justice Ridley are credited in the report of the case published in the *Daily Telegraph* with interpellations such as, "Then peach brandy would not be brandy?" and "What about sloe gin?" which, though possibly humorous, seemed to ignore unnecessarily the contention of those who prosecute in these cases that brandy is both etymologically and in the meaning of those who ask for it a simple distillation from a wine made from grapes. Articles such as those mentioned are not distillations from the juice of the fruits named but compounds or decoctions of these with whatever spirit is used, and certainly no one who asks for cherry brandy, for example, expects to be served with cognac pure and simple. It will be all the better for him if "brandy" has been used in the manufacture of what he buys, but the question, "What is brandy from a legal point of view?" must first be answered before the purity of its compounds can be vindicated, and it is an inquiry in the determining of which a great deal of money is being spent by litigants in the absence of a statutory definition.

The Epileptic Patient and the Lunacy Laws.

On Saturday last, Jan. 6th, at the Brighton borough bench, the keeper of an invalid home was summoned at the instance of the Commissioners in Lunacy for taking charge of a lunatic at an unlicensed address. The patient in respect of whom the action was brought was an epileptic and the magistrates, while pointing out that the keeper of the home had treated the patient with kindness and care, decided to fine her for a technical breach of the law. On the following Monday a similar case was before the Haywards Heath petty sessions, and here the magistrate decided that the patient in question, an epileptic, was not a certifiable lunatic and found in favour of the keeper of the home. The discrepancy between these two decisions illustrates a very difficult point in lunacy law to which attention may well be invited.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Jan. 12th, 1828.

ROYAL INSTITUTE OF FRANCE.

Sitting of the 2d October.

M. JULIA FONTENELLE presented a head of a New Zealander in a complete state of preservation. The teeth were sound and complete; the hair very black, rough, long, and curled; the skin was of a yellow colour, and the tattooed surface was black, very regular and smooth. The head appeared to be that of a man about thirty or forty years old. Notwithstanding this, the sutures of the skull were perfectly ossified internally, which is seldom the case, excepting in the skulls of old persons. The occipital region was very large, its projection well marked, whilst the frontal cavity was narrow. There was a vertical bony septum, of more than two lines in height, in the interior of the skull, which the members of the Academy had an opportunity of seeing. This anatomical variety having only been observed in animals, the facial angle of this head, as well as of the inhabitants generally of New Zealand, being very narrow, the frontal cavity very limited, M. J. Fontenelle concludes, that this race may be considered as a sort of link between man and the ourang outang. The head presented by M. J. Fontenelle was evidently not tanned, but had only been immersed in a solution of chloruret of sodium (marine salt), and then slowly dried.

VERY IMPORTANT INTELLIGENCE!

MR. BRODIE, the eminent surgeon, when opening the body of the late Earl of Pembroke, cut his finger with one of the instruments he used on that occasion, and was so ill for several days afterwards, as to be incapable of attending his patients.—*Morning Post.*

On Monday morning last, at nine o'clock precisely, a cat sneezed at the door of No. 14, Saville Row.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 9,155 births and 5548 deaths were registered during the week ending Jan. 6th. The annual rate of mortality in these towns, which had been 17·0, 17·8, and 17·4 per 1000 in the three preceding weeks, increased again to 18·3 per 1000 last week. In London the death rate was 19·4 per 1000, while it averaged 17·8 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 9·0 in Walthamstow and in Rhondda, 9·6 in East Ham, 10·2 in Hornsey, 11·1 in Northampton, 11·2 in Reading, 11·5 in King's Norton, 12·4 in Hastings, and 12·9 in Swansea; the highest rates were 21·5 in Leeds, 22·5 in Huddersfield, 23·3 in Burnley, 23·7 in Bootle, 23·9 in Liverpool, 24·2 in Smethwick, 24·9 in Bury,

and 30·5 in Preston. The 5548 deaths in these towns last week included 464 which were referred to the principal infectious diseases, against 391, 439, and 405 in the three preceding weeks; of these 464 deaths, 141 resulted from measles, 120 from whooping-cough, 70 from diphtheria, 61 from scarlet fever, 46 from diarrhœa, and 26 from "fever" (principally enteric), but not any from small-pox. No death from any of these diseases was registered last week in East Ham, Hastings, Bournemouth, Ipswich, Burton-on-Trent, King's Norton, Smethwick, Coventry, Birkenhead, Wallasey, Bootle, St. Helens, Wigan, or Tynemouth; while the highest death-rates from the principal infectious diseases were recorded in Hanley, Aston Manor, Leicester, Liverpool, Blackburn, Preston, Leeds, Gateshead, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in Willesden, Wolverhampton, Aston Manor, Blackburn, Preston, Leeds, Gateshead, and Swansea; from scarlet fever in Liverpool, Blackburn, and Sheffield; from diphtheria in Hull and Merthyr Tydfil; from whooping-cough in Aston Manor, Leicester, Stockport, Warrington, Salford, Burnley, and Gateshead; and from diarrhœa in Walsall. The mortality from "fever" showed no marked excess in any of the large towns. No deaths from small-pox were registered last week in any of the 76 towns and no cases of this disease were under treatment during the week in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, the 6th inst., was 3299, against 3670, 3409, and 3446 on the three preceding Saturdays; 291 new cases were admitted during the week, against 341, 295, and 295 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 460, 516, and 426 in the three preceding weeks, rose again to 454 last week and were 24 above the average number in the corresponding periods of the four preceding years. The causes of 67, or 1·2 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Nottingham, Salford, Bradford, Leeds, Hull, and 41 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Smethwick, Liverpool, Bootle, St. Helens, Bury, Blackburn, Preston, Barrow-in-Furness, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 18·2, 17·4, and 18·2 per 1000 in the three preceding weeks, further rose to 19·8 per 1000 during the week ending Jan. 6th, and was 1·5 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 13·2 in Paisley and 16·5 in Aberdeen to 22·7 in Leith and 26·2 in Dundee. The 680 deaths in these towns included 33 which were referred to measles, 20 to diarrhœa, 13 to diphtheria, 11 to whooping-cough, two to scarlet fever, and one to "fever." In all 80 deaths resulted from these principal infectious diseases last week, against 64, 83, and 65 in the three preceding weeks. These 80 deaths were equal to an annual rate of 2·3 per 1000, which was 0·8 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 31, 43, and 25 in the three preceding weeks, rose again last week to 33, of which 18 were registered in Glasgow, eight in Dundee, and five in Greenock. The deaths from diarrhœa, which had been 18, 15, and 14 in the three preceding weeks, rose again to 20 last week, and included 11 in Glasgow, four in Dundee, and two in Edinburgh. The fatal cases of diphtheria, which had been three, 11, and 12 in the three preceding weeks, further rose last week to 13, of which six occurred in Glasgow and three in Dundee. The deaths from whooping-cough, which had been six, nine, and seven in the three preceding weeks, rose again to 11 last week, and included eight in Dundee and two in Glasgow. The fatal cases of scarlet fever, which had been four, one, and three in the three preceding weeks, declined again last week to two, both of which were registered in Leith. The deaths referred to diseases of the respiratory organs in these towns, which had been 117, 130, and 99 in the three preceding weeks, rose again last week to 136 and were 46 below the number in the corresponding period of last year. The causes of 25, or nearly 4 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19·7, 22·3, and 17·9 per 1000 in the three preceding weeks, rose again to 21·7 per 1000 during the week ending Jan. 6th. During the past four weeks the death-rate has averaged 20·4 per 1000, the rates during the same period being 19·0 in London and 16·2 in Edinburgh. The 158 deaths of persons belonging to Dublin registered during the week under notice were 28 in excess of the number in the preceding week and included six which were referred to the principal infectious diseases, against seven in each of the two preceding weeks; of these, three resulted from "fever" and one each from diphtheria, from whooping-cough, and from diarrhœa, but not any from small-pox, measles, or scarlet fever. These six deaths were equal to an annual rate of 0·8 per 1000, the death-rates last week from the principal infectious diseases being 1·5 in London and 0·8 in Edinburgh. The three fatal cases of "fever" corresponded with the number in the preceding week. The 158 deaths in Dublin last week included 19 of children under one year of age and 40 of persons aged 60 years and upwards; the deaths of infants were slightly in excess of the number in the preceding week, while those of elderly persons showed a decline. Five inquest cases and four deaths from violence were registered, and 57, or more than a third, of the deaths occurred in public institutions. The causes of four, or nearly 3 per cent., of the deaths registered in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING DECEMBER, 1905.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·7 per 1000 of the population, estimated at 4,684,794 persons in the middle of last year. In the three preceding months the rates had been 9·4, 10·0, and 9·4 per 1000 respectively. The lowest rates last month were recorded in Paddington, Kensington, Hammersmith, City of Westminster, St. Marylebone, Hampstead, and Holborn; and the highest rates in Hackney, Finsbury, Bethnal Green, Poplar, Bermondsey, Deptford, and Greenwich. The prevalence of scarlet fever showed a very marked decline last month; among the various metropolitan boroughs this disease was proportionally most prevalent in Hackney, Finsbury, Bethnal Green, Poplar, Bermondsey, and Battersea. The Metropolitan Asylums hospitals contained 3410 scarlet fever patients at the end of last month, against 3567, 4187, and 3976 at the end of the three preceding months; the weekly admissions averaged 318, against 457, 509, and 449 in the three preceding months. The prevalence of diphtheria showed no noticeable variation from that recorded in the preceding month; the greatest proportional prevalence of this disease occurred in Hackney, Bethnal Green, Poplar, Southwark, Bermondsey, Deptford, Greenwich, and Woolwich. The Metropolitan Asylums hospitals contained 701 diphtheria patients at the end of last month, against 730, 796, and 723 at the end of the three preceding months; the weekly admissions averaged 101, against 114, 123, and 100 in the three preceding months. Enteric fever was considerably less prevalent last month than in any of the five preceding months; among the various metropolitan boroughs this disease was proportionally most prevalent in Paddington, Hammersmith, City of Westminster, St. Marylebone, Hackney, Holborn, and Shoreditch. There were 78 enteric fever patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 143, 157, and 115 at the end of the three preceding months; the weekly admissions averaged 13, against 24, 26, and 17 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Bethnal Green, Stepney, Southwark, and Deptford. The 26 cases of puerperal fever notified during the month included four in Fulham, three in Lambeth, and two each in Islington, Wandsworth, Camberwell, Lewisham, and Woolwich.

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING DECEMBER, 1905.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS	Estimated population in the middle of 1905	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,684,794	—	1189	485	—	95	—	36	410	—	2405	6·7	—	223	63	66	124	—	13	—	64	563	1·5	6314	17·6	150
West Districts.																										
Paddington	147,935	—	9	7	—	9	—	1	12	—	38	3·3	—	4	—	—	2	—	—	—	4	10	0·9	191	16·8	120
Kensington	180,083	—	14	4	—	3	—	—	12	—	33	2·4	—	2	2	—	—	—	2	—	2	8	0·6	184	13·3	143
Hammersmith	119,037	—	14	11	—	5	—	—	9	—	39	4·3	—	4	1	—	3	—	—	—	2	10	1·1	155	17·0	177
Fulham	157,210	—	33	14	—	2	—	4	13	—	66	5·5	—	11	2	3	6	—	1	—	3	26	2·2	207	17·2	153
Chelsea	74,496	—	14	3	—	1	—	1	8	—	27	4·7	—	1	—	—	—	—	—	—	2	3	0·5	122	21·3	168
City of Westminster	175,606	—	23	12	—	7	—	—	8	—	50	3·7	—	4	1	1	2	—	1	—	—	9	0·7	218	16·2	187
North Districts.																										
St. Marylebone	129,453	—	18	6	—	4	—	1	13	—	42	4·2	—	—	—	—	1	—	—	—	2	3	0·3	198	19·9	133
Hampstead	88,142	—	14	7	—	1	—	—	5	—	27	4·0	—	3	1	1	—	—	—	—	—	5	0·7	76	11·2	121
St. Pancras	236,183	—	66	23	—	6	—	1	19	—	115	6·3	—	5	5	4	20	—	—	—	2	36	2·0	340	18·8	146
Islington	342,994	—	94	27	—	2	—	2	22	—	147	5·6	—	35	4	7	9	—	1	—	3	59	2·2	467	18·5	165
Stoke Newington	52,828	—	14	1	—	1	—	—	2	—	18	4·4	—	—	—	1	—	—	—	—	—	1	0·2	58	14·3	94
Hackney	228,479	—	96	33	—	8	—	1	27	—	165	9·4	—	—	4	6	3	—	3	—	3	19	1·1	267	15·2	127
Central Districts.																										
Holborn	56,481	—	6	2	—	2	—	1	6	—	17	3·9	—	—	—	—	—	—	—	—	2	2	0·5	64	14·8	48
Finsbury	98,207	—	47	4	—	—	—	—	6	—	57	7·6	—	—	4	1	1	—	—	—	—	6	0·8	146	19·4	90
City of London	22,425	—	7	—	—	—	—	—	2	—	9	5·2	—	—	—	—	1	—	—	—	1	2	1·2	44	25·6	286
East Districts.																										
Shoreditch	116,565	—	42	7	—	4	—	—	5	—	58	6·5	—	1	·1	4	4	—	—	—	—	10	1·1	186	20·8	171
Bethnal Green	130,401	—	58	18	—	4	—	—	22	—	102	10·2	—	6	5	—	10	—	—	—	1	22	2·2	203	20·3	161
Stepney	305,466	—	105	38	—	7	—	1	44	—	195	8·3	—	22	5	10	18	—	—	—	8	63	2·7	467	19·9	156
Poplar	170,280	—	79	32	—	1	—	1	19	—	132	10·1	—	1	2	4	7	—	—	—	3	17	1·3	254	19·4	182
South Districts.																										
Southwark	208,528	—	54	30	—	5	—	—	27	—	116	7·3	—	37	3	5	—	—	1	—	2	48	3·0	359	22·4	186
Bermondsey	129,006	—	84	21	—	—	—	—	11	—	116	11·7	—	11	5	2	5	—	—	—	2	25	2·5	234	23·6	230
Lambeth	313,045	—	111	31	—	2	—	3	20	—	167	7·0	—	24	6	4	7	—	—	—	6	47	2·0	403	16·8	133
Battersea	177,532	—	71	19	—	1	—	1	10	—	102	7·5	—	5	3	—	5	—	—	—	—	13	1·0	179	13·1	89
Wandsworth	265,332	—	73	25	—	7	—	2	17	—	124	6·1	—	9	1	5	7	—	1	—	7	30	1·5	325	16·0	138
Camberwell	271,240	—	81	19	—	2	—	2	24	—	128	6·2	—	26	4	1	4	—	—	—	2	37	1·8	350	18·3	146
Deptford	114,495	—	44	19	—	2	—	—	15	—	80	9·1	—	3	4	1	4	—	1	—	2	15	1·7	144	16·4	157
Greenwich	103,493	—	34	30	—	2	—	—	9	—	75	9·4	—	2	—	2	2	—	1	—	2	9	1·1	115	14·5	172
Lewisham	144,420	—	40	15	—	3	—	2	15	—	75	6·8	—	6	—	1	2	—	1	—	3	13	1·2	148	13·4	112
Woolwich	125,372	—	44	27	—	2	—	2	8	—	83	8·6	—	1	—	3	1	—	—	—	—	5	0·5	160	16·6	165
Port of London	—	—	—	—	—	2	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in public institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending Dec. 30th 6314 deaths of persons belonging to London were registered, equal to an annual rate of 17·6 per 1000; in the three preceding months the rates had been 13·6, 14·0, and 17·0 per 1000. The death-rates last month ranged from 11·2 in Hampstead, 13·1 in Battersea, 13·3 in Kensington, 13·4 in Lewisham, 14·3 in Stoke Newington, 14·5 in Greenwich, and 14·8 in Holborn to 20·3 in Bethnal Green, 20·8 in Shoreditch, 21·3 in Chelsea, 22·4 in Southwark, 23·6 in Bermondsey, and 25·6 in the City of London. The 6314 deaths from all causes in London last month included 553 which were referred to the principal infectious diseases; of these, 223 resulted from measles, 63 from scarlet fever, 66 from diphtheria, 124 from whooping-cough, 13 from enteric fever, and 64 from diarrhœa. The lowest death-rates from these diseases were recorded in Kensington, Chelsea, St. Marylebone, Stoke Newington, Holborn, and Woolwich; and the highest rates in Fulham, St. Pancras, Islington, Bethnal Green, Stepney, Southwark, Bermondsey, and Lambeth. The 223 deaths from measles were slightly below the corrected average number; among the various metropolitan boroughs the greatest proportional mortality from this disease was recorded in Fulham, Islington, Stepney, Southwark, Bermondsey, Lambeth, and Camberwell. The 63 fatal cases of scarlet fever were 13 in excess of the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in St. Pancras, Finsbury, Bethnal Green, Bermondsey, and Deptford. The deaths from diphtheria numbered 66, against a corrected average of 161 in the corresponding periods of the ten preceding years; among the various metropolitan boroughs the greatest proportional fatality from this disease occurred in Islington, Hackney, Shoreditch, Stepney, Poplar, Southwark, and Woolwich. The 124 fatal cases of whooping-cough were five above the corrected average; the highest death-rates last month from this disease occurred in Fulham, St. Pancras, Bethnal Green, Stepney, Poplar, and Bermondsey. There were only 13 deaths from enteric fever last month, against an average of 60 in the corresponding periods of the ten preceding years; of these 13 deaths three belonged to Hackney and two to Kensington. The 64 fatal cases of diarrhœa were eight in excess of the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Paddington, Chelsea, Holborn, Stepney, Wandsworth, and Lewisham. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was more than 18 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 150 per 1000. The lowest rates of infant mortality were recorded in Stoke Newington, Holborn, Finsbury, Battersea, and Lewisham; and the highest rates in Hammersmith, City of Westminster, City of London, Poplar, Southwark, and Bermondsey.

THE SERVICES.

THE HEALTH OF THE ROYAL NAVY.

THE statistical report of the health of the navy for the year 1904 has just been issued in the form of a Blue-book. During the year under notice there was an increase in *personnel* of 7470 as compared with the previous year, while decreases are shown in the ratios of cases, invalidings, and deaths as compared with the average of the last seven years. One fatal case of yellow fever is reported and one case of plague in a Lascar and 12 cases of small-pox are recorded. There has been a satisfactory decrease in the ratio of all classes of venereal diseases. We hope to deal fully with this report in an early issue.

ROYAL NAVY MEDICAL SERVICE.

The following appointments are notified:—Fleet Surgeon G. A. Dreaper to the *Duke of Edinburgh*. Staff Surgeons: F. D. Lumley to the *Nile*; M. C. Langford to the *Blake*; G. Gibson to the *Topaze*; and W. Jackson to the *Tenedos*. Surgeon C. R. Rickard to the *Pigard*.

ARMY MEDICAL STAFF.

Surgeon-General James A. Clery, C.B., is placed on temporary half-pay on account of ill-health (dated Dec. 29th, 1905).

ROYAL ARMY MEDICAL CORPS.

Captain James E. Carter to be Major (dated Dec. 2nd, 1905). Lieutenant Ryder P. Nash resigns his commission (dated Jan. 6th, 1906). Lieutenant Arthur J. Arch resigns his commission (dated Jan. 10th, 1906).

Lieutenant-Colonel H. W. Murray is appointed to Shorncliffe for duty and Lieutenant T. S. Coates is transferred from the 6th (Poona) Division to the 5th (Mhow) Division. Lieutenant-Colonel J. Meek is appointed for duty in India.

IMPERIAL YEOMANRY.

Royal East Kent (the Duke of Connaught's Own): Surgeon-Lieutenant R. L. Moorhead to be Surgeon-Captain (dated Sept. 12th, 1905).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Fifeshire: William Elmslie Henderson to be Surgeon-Lieutenant (dated Jan. 10th, 1906).

Rifle: 2nd Volunteer Battalion the Loyal North Lancashire Regiment: Surgeon-Lieutenant-Colonel E. M. Garstang is granted the honorary rank of Surgeon-Colonel (dated Jan. 10th, 1906). 1st Volunteer Battalion the King's (Shropshire Light Infantry): William Dyson to be Surgeon-Lieutenant (dated Jan. 10th, 1906).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

London District: London Companies: Captain C. T. D. Urquhart is seconded under the conditions of paragraph 90, Volunteer Regulations, whilst residing in South Africa (dated Dec. 23rd, 1905). Captain F. J. L. Warwick (Transport Officer) resigns his commission (dated Dec. 23rd, 1905).

DEATHS IN THE SERVICES.

Sir Joseph Ewart, Deputy Surgeon-General (retired), at Brighton, on Jan. 10th, in his 75th year. He entered the East India Company's services as surgeon in 1854 and served during the Indian Mutiny with the Meywar Bheel Corps. He was three times Mayor of Brighton and the author of several important scientific works. He retired in 1879.

LORD ROBERTS'S SCHOOL CAMPAIGN.

Lord Roberts is indefatigable in his efforts to get his scheme of elementary military training and the use of the rifle for schoolboys generally adopted and we are glad to say with no little success. He addressed a crowded meeting of assistant masters of secondary schools at St. Paul's School, West Kensington, the other day, on the subject of Military Training in Schools. His address elicited the announcement by Canon Lyttelton that in a few months rifle training will be compulsory at Eton. Other public or large schools, such as have not already done so, may be expected to follow the example of Eton. In other directions also the movement for rifle practice is progressing. Mr. C. B. Fry has recently called attention to the fact that there is an absence of any military value in our popular games and sports at the present time, which should not be the case, and has pointed out how this might be remedied by making rifle shooting a national sport. As we have already said, we regard a course of elementary drill with the use of the rifle as highly beneficial from a hygienic point of view—for improving the physique and inculcating habits of prompt obedience and alertness of mind and body.

THE NEW WAR MINISTER.

The nation will shortly be in the throes of an election and as soon as it is over our future War Office policy will have to be settled. Meanwhile, if we may judge from the general satisfaction and appreciation with which the recent address of Mr. R. B. Haldane has been received, the new Secretary for War has made an excellent beginning. He adopted an eminently fair and courteous tone towards his predecessors in office, expressed his desire to develop a truly national army suitable to the special nature and complex requirements of this country, and to maintain, as far as practicable, a continuity of policy in the aims and objects he had in view. Even apart from the big questions connected with army organisation and reform there is a great deal that has still to be done to meet the medical and sanitary needs of the army and to provide it with a medical reserve such as is likely to prove adequate and efficient for the purpose of war.

SCHOOL OF HYGIENE FOR ALDERSHOT.

The *Army and Navy Gazette* of Jan. 6th alludes to a possible scheme of establishing a school of hygiene at Aldershot for the instruction of regimental officers and Royal Army Medical Corps men in sanitary duties, &c., which probably may develop into a definite sanitary organisation. The Army Medical Service can do much to promote the health of the army but regimental officers can probably do even more by impressing upon the men the necessity of sanitary precautions and pointing out to them the causes and consequences of disease.

SANITARY ACCOMMODATION ON BATTLESHIPS.

An important departure has been made in the sanitary arrangements of the battleship *Hibernia* at Devonport, and for the first time in any warship separate accommodation has been provided in the latrines and urinals, thus insuring complete isolation. On sanitary, hygienic, and moral grounds the change is excellent.

RUSSIAN RED CROSS SOCIETY AND SURPLUS STORES.

The executive committee of the Russian Red Cross Society is desirous of constituting a store of material sufficient to fit and to furnish with medicaments, &c., 2000 beds. This will be a simple matter in view of the material not yet despatched to the Far East and the material returned therefrom. The only question to be solved is the rent of the warehouse and the pay of the attendants.

It has been decided to provide blue serge gowns and slippers at all recruiting depôts for the use of recruits when awaiting medical inspection.

Correspondence.

"Audi alteram partem."

SANATORIUM TREATMENT FOR TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—In Dr. Arthur Latham's interesting article on the Economic Value of Sanatoriums in THE LANCET of Jan. 6th, p. 11, allusion is made to the statistics of the duration of phthisis published by my father, Dr. C. J. B. Williams, and myself in 1871, and errors occur in the quotation which would give rise to a wrong impression. Unfortunately, Dr. Latham quotes from Dr. Wilson Fox's extract of our statistics, which is incorrect, and not, as is safest, from the original figures which are to be found in vol. liv. of the Transactions of the Royal Medical and Chirurgical Society, 1870, and in the first and second editions of "Pulmonary Consumption," 1871 and 1887. Dr. Latham's paragraph is as follows:—

> Dr. C. J. B. Williams[1] stated that out of 7000 hospital cases of phthisis he could only reckon 24 instances of cure and 51 of partial cure with indefinite duration, or a total of 75, and out of 1000[2] patients in the upper classes treated between 1840 and 1870 only 34 recovered completely, though 285 could be classed as well when regarded in relation to their general health.

With regard to the first statement I have referred to the chapter and page cited and find no mention of it and I think such a statement highly improbable, as Dr. C. J. B. Williams never was on the acting staff of the Brompton Hospital and derived his hospital experience of phthisis from University College Hospital, where he was physician for ten years, and this supplied him with a large number of valuable necropsies, as the book shows, but with comparatively few clinical cases. Though I am solely responsible for the statistical portion of the work I do not remember any statement of the sort.

The second statement, "That out of 1000 patients in the upper classes treated between 1840 and 1870 only 34 recovered completely, though 285 could be classed as well when regarded in relation to their general health," is misleading because the local results—i.e., the changes in the lungs—and the general results are confused.

In my 1000 cases the local results give the condition of the lungs at the commencement and close of observation; and the number of *absolute arrests*, where the physical signs had disappeared altogether, was 34, or 4·5 per cent., the number of *improved* 38 per cent., making altogether 42·5 per cent. of local improvement—i.e., where the physical signs improved or disappeared. But Dr. Latham, in comparing our results with those of the German sanatoriums, uses as the standard for the German "fitness for work" and not local results. He says: "No statement is made as to the time which has elapsed in the case of these 285 patients from the commencement of their disease—that is to say, of the length of time during which they had maintained their good condition, beyond the fact that they were 'well' when last seen." I cannot understand how anyone reading the chapter on the Duration of Consumption could arrive at this conclusion, but your readers must judge for themselves. Of the 1000 cases 198 died and the average duration of life among these was 7 years 8 7 months or nearly 8 years. 64 per cent. lived five years and upwards, of whom one lived 47 years after attack; 36 per cent. lived less than five years. The condition of the 802 patients who were living at the date of publication of the statistics is divided into three classes: (1) Well, who have apparently quite recovered their general health and are able to follow their occupations without any recurrence of former symptoms; (2) tolerably well, who are able to follow their occupations more or less actively but are subject to a recurrence of symptoms and are obliged to limit their exertions; (3) invalids who are obliged to devote themselves to the care of their health. The 802 patients were distributed as follows: well, 285, or 35·5 per cent.; tolerably well, 293, or 36·5 per cent.; and invalid, 224, or 28 per cent. These patients were all alive and the average duration of life from their first symptoms was at that time eight years and two months. 41·4 per cent. had lived five years and upwards and 30 per cent. from ten to 30 years.

The question is, What proportion were fit for work in the German statistics parlance? We must bear in mind that our patients belonged to the upper and middle classes of society and not to the labouring class and so their work, as a rule, involved less strain to the muscular system, though probably more to the nervous system; but experience tells us that indoor and sedentary occupations and great mental pressure predispose to consumption equally with the occupations of the lower classes. The statistics therefore demonstrate that 802 consumptive patients, after being under observation for an average of eight years, were able to show 72 per cent. who were capable of following their professions and callings more or less actively and 35½ per cent. were in full swing of work. I do not fear comparison of these statistics with those of any German sanatoriums. I know the German sanatoriums' statistics well and if Dr. Latham will refer to my Oration[3] delivered before the Reading Pathological Society he will find them fully discussed there, but he will see also that the German assurance statistics yield greatly inferior results to those of Swiss sanatoriums.

But, after all, it is very difficult to settle questions of this kind by statistics because it is rare to find statistics which are really comparable. Those of the upper classes cannot be fairly compared with those of the lower classes, as the conditions differ largely, and when I commenced my article I determined not to introduce statistics into it but to confine myself to the points submitted to me.

I am, Sirs, yours faithfully,

Jan. 8th, 1906. C. THEODORE WILLIAMS.

To the Editors of THE LANCET.

SIRS,—The articles appearing in THE LANCET of Jan. 6th are most interesting and instructive. I sincerely hope that general practitioners will take the deepest interest in those papers and will, further, not hesitate to express their opinions on the matters contained therein. Had we the power to isolate *all* cases of phthisis we might, I imagine, predict that in the next 25 years the disease would be eradicated. As the present system of sanatoriums costs an enormous sum of money annually it is very right that the medical profession should earnestly inquire, How far does this system reach our ideals on the subject?

I regret to say that in my opinion the present system merely brings us to the threshold of the whole problem. The spread of the disease is little if at all checked by existing sanatoriums. Why? Because those cases only are

[1] Quoted in Dr. Wilson Fox's Diseases of the Lungs and Pleura. Second edition, p. 838.

[2] Pulmonary Consumption, by Dr. C. J. B. Williams and Dr. C. Theodore Williams. Second edition, p. 327.

[3] THE LANCET, Jan. 30th, 1904, p. 278.

admitted which have already shown signs of improvement or are in the initial stage of the disease. All advanced cases must remain at home. The more advanced they are the more infective they must be. By this means we avoid grappling with the greatest danger to the community. We are also apt to arrive at a false conclusion concerning the value of sanatorium treatment, as these statistics are quoted from carefully selected cases, many of which would have become quiescent by careful treatment at home. This is a fact known to every practitioner even of limited experience. It therefore seems that in order to be of the greatest service to the country the sanatorium treatment must be extended in order to include advanced cases or special hospitals must be built in order to meet this demand. I believe that the vast majority of medical men agree that the amount of money now expended on sanatoriums is out of all proportion to the resulting benefit.

I am, Sirs, yours faithfully,

BOUVERIE F. P. MCDONALD, M.D. Edin.

New Brighton, Jan. 6th, 1906.

PHYSIOLOGICAL TESTS FOR PHARMACEUTICAL PREPARATIONS.

To the Editors of THE LANCET.

SIRS,—I have only recently had an opportunity of reading the article on this subject which appeared in THE LANCET of Dec. 23rd, 1905. The attention which you are giving to this important question must be welcome to all who have ever had occasion to make or test pharmaceutical products. To such workers it is well known that in the present state of our chemical ignorance of the composition of many of the most important therapeutic remedies the chemist is unable to determine the quality of such. The estimation of the extractive as indicated by the residue left on evaporation is at best but a rough indication useful for the manufacturer as a check on his workmen. Its indiscriminate use with preparations of such a drug as digitalis would be positively dangerous; that is to say, if there were any attempt to standardise the preparations to a definite amount of extractive.

With regard to physiological tests, I do not think there is any question of altering the doses in accordance with reports received from a pharmacological laboratory. It is obvious that if a preparation is proved by physiological experiment to be too strong, it can be diluted; if too weak, it may perhaps be concentrated or, better, rejected. Undoubtedly such tests can only be performed by a central laboratory and the certificate issued should be dated so that the products may not be used after the expiration of some time. It has, however, been recently shown by Dr. W. E. Dixon and Mr. G. S. Haines that such preparations may be kept for at least six months without perceptible diminution of therapeutic strength.

The question of popular prejudice against such methods of testing is not a serious one, as the facts are not likely to come under the immediate notice of members of the general public. Besides, the system has for some time been in vogue for sera. With regard to the inclusion of such tests in the Pharmacopœia a precedent has been established in Germany, the Pharmacopœia of that country requiring that anti-diphtheritic sera should be tested in an Imperial institution and sold under an official seal and bearing a label giving the name of the manufacturing firm, the amount of antitoxin in each cubic centimetre, as well as the controlling number and the date of the official certificate. It is, moreover, enacted that sera bearing a control number which has been officially recalled must not be dispensed in pharmacies.

I am, Sirs, yours faithfully,

H. WIPPELL GADD,
Lecturer on Materia Medica and Pharmacy, Royal Albert Memorial College, Exeter.

Exeter, Jan. 5th, 1906.

DOCTORS IN THE DOCK.

To the Editors of THE LANCET.

SIRS,—There would seem to be something peculiarly alluring to the reporter's mind, assuming that he has one, in such headings as "Grave Charge against a Surgeon," "Medical Man Charged with Theft," and the like, to judge from the number of such that have been appearing in the daily press recently. They tickle the public palate, I suppose, but it is most unfair to us, for the vast majority of the prisoners are not medical men at all. Any specious blackguard who wishes to inspire confidence may very readily do so by adopting one of the learned professions and the cloak of respectability connected therewith. To assume the rôle of a priest one must dress the part, which is irksome; the legal profession takes commendable care of itself; remains therefore our unfortunate calling, so our genial knave dubs himself a doctor and all goes well until he is found out, when *we* suffer. Since the egregious Bridgwater retired for a well-earned rest I have noticed three or four cases of this description, counsel explaining in one of them, still *sub judice*, that the prisoner was not really a surgeon but had personated a deceased medical man of the same name; at subsequent hearings, however, he is still placidly described as a surgeon. I am not trespassing on your space, however, to ventilate a grievance which must be patent to all but to suggest a remedy. "A. B., a medical man, was charged," &c., and "A. B., stated to be a medical man, but whose name does not appear on the Medical Register," are, I think, two very different things, and if you, with your usual courtesy, can induce the press agencies and news editors of the London dailies to think so too, our long-suffering profession will be under a distinct obligation to you.

I am, Sirs, yours faithfully,

Matlock, Jan. 7th, 1906. C. FRANCIS STEELE.

THE PRELIMINARY TREATMENT OF SEROUS EFFUSION.

To the Editors of THE LANCET.

SIRS,—In the notice with which you have honoured some of my remarks on the treatment of serous pleurisy the context supplies an almost sufficient indication that the word "intravenous" (in the nineteenth line of p. 48) is a misprint. Nevertheless, in order to obviate any serious misunderstanding you will, perhaps, permit me to state that the "preliminary injection," of which I owe the suggestion to Sir James Barr's well-known method, is not intravenous but intraserous. The effects of adrenalin are apt to be too potent to justify, in my opinion, its intravenous administration. But the preliminary injection of a moderate dose into the serous effusion may be regarded as free from risk by reason of the considerable dilution afforded by the fluid into which it is effected and of the exceedingly gradual action exerted upon the serous membrane. I need not dwell upon the other details of the "preliminary treatment," nor upon those of the "after-treatment," as they are set forth in the paper which I hope may be published at an early date. I should, however, mention that on p. 47 "Carson" should be read instead of "Carter," and "Stanski" instead of "Stamsky."

I am, Sirs, yours faithfully,

Curzon-street, W., Jan. 6th, 1906. WM. EWART.

THE LATE DR. H. I. FOTHERBY

To the Editors of THE LANCET.

SIRS,—May I add a few words to the obituary notice of the late Dr. Fotherby contained in THE LANCET of Dec. 30th, 1905, in recognition of the debt which the Hunterian Society owes to his memory? Few medical societies have been more loyally and devotedly served by one member. Entering the society in the year 1854, during the presidency of Dr. Lever, he became secretary three years later and held that post under nine successive presidents, filling afterwards almost every office in the society, including that of treasurer from 1871 to 1889. Volumes of the minutes and accounts are filled with his neat handwriting. He compiled the roll-book of the members, a work of no little research. When it came to his turn to be the society's orator in 1869 he celebrated its jubilee by a discourse on the rise of "Scientific Associations," with a history of the Hunterian Society. The oration was published and is often referred to; at the present time, when the amalgamation of the medical societies of London is in view, it has a special interest. Dr. Fotherby's labours were given freely, ungrudgingly, and with the kindness and geniality that belonged to his character. It is a pleasant duty to bear witness to his devotion during a long life to the cause of scientific medicine and surgery, as represented by the Hunterian Society.—I am, Sirs, yours faithfully,

R. HINGSTON FOX,
Honorary Treasurer, Hunterian Society.

Weymouth street, W., Dec. 30th, 1905.

MODERN MEDICAL EDUCATION.

To the Editors of THE LANCET.

SIRS,—"L.S.A.'s" letter, which appeared in your issue of Dec. 23rd, 1905, only partially points out the truth of the matter and may well be the starting-point of a correspondence on a very serious question, one that really affects the position of this country compared with other countries in matters of research and advance in the science and art of surgery and medicine. I write from his son's point of view and being apparently in the same box through no fault of my own I write with some feeling.

The utter incompatibility of the present routine, cut-and-dried, signing-up system of so-called medical education by means of a "curriculum" with the learning of one's profession is only too evident. To be precise by means of an instance, I go into a ward for the first time after having passed my intermediate examination and I see and examine a patient with pneumonia. I find that almost all my acquired knowledge is useless and I have to start afresh. I am told that the patient has pneumonia and it is a good way of teaching. Having done as much as I can think of my only desire is to go and see other cases, to compare them, to study specimens, to read and consider the experience and statistics of others, then to return and to study the patient again and again to study the causes, symptoms, pathology, diagnosis, prognosis, and treatment of the disease and to ponder for a season. Not so, however. I must at once hurry off to attend—"get signed up for"—Dr. ——— lecture on forensic medicine, for I may have no other chance and when I require to enter for my final examination I may be disqualified if I am not signed up. Forensic medicine and many other subjects dealt with in lectures are of such absorbing interest that any man would read them and study them carefully without being driven to do so if only he were advised in the matter and given the chance at his own time. Most subjects are better and more completely treated in books than in lectures, and how often is not the subject matter of the lecture transferred directly to the note-book without leaving any impression on the brain of the student? Very often; and I know for certain that the notes are often not looked at again because they are found to be too scrappy and imperfect. The only advantage of lectures from the student's point of view is to emphasise particular points, to draw attention to important central ideas in any large subject.

The result of the system is simply this. A man is turned out, as in my own case, with little or no knowledge of his profession or of its etiquette, with perhaps some knowledge of the way to investigate but not to manage a patient complaining of ill-health, with very much too much knowledge of the intimate pathology of all the other possibilities of the case, with no idea of how to prescribe or even to understand a written prescription, with no knowledge of his own language so that he may converse with a patient or describe or explain anything intelligibly, with no knowledge of foreign languages, for he has never been given time to educate himself between the ages of eight, at which age the three examinations a year of modern education begin—less the holiday task—and 25, when sometimes they end, with no training in bookkeeping, and with no capacity for business. He is utterly sick of most of the matter he has been forced to listen to, his brain at the end of it is riddled with holes, each one left by an examination, and he falls a ready victim to those ready to prey on him at a starvation wage by trading on competition. The cranial sinuses discharge facts and débris in the shape of his acquired knowledge and eventually dry up and become contracted unimpressionable scars. The mill, in fact, leaves the poor wretch a medical man in tabloid form, with all the tentacles wherewith he was going to tackle a patient not sharpened and sensitised but shorn off, and in their place a string of letters dragging behind like the tail of a comet and of which the average layman does not know the significance or meaning.

A system based on the assumption that the average student is not conscientious is wrong. His common sense will tell him that if he does not work he will afterwards starve. If he works in the early stages he acquires heaps of facts that are merely numerical or technical—e.g., the absorption bands of oxyhæmoglobin—or which are tabulated and charted and with which any observed facts can be at any time compared, which, by the way, is usually done in practice for safety's sake! The examiners themselves sometimes put the cart before the horse and in the most unscientific way possible ask a man to identify a tracing instead of telling him the known factors in the experiment and then asking him to interpret the curve. In many other ways he is crammed with theory stated as fact, especially in some of the modern text-books on physiology. The only logical students' book on this subject he is generally advised not to read because it is too lengthy! To say that this system teaches a man to think logically and to manage a patient is ludicrous; it simply teaches him to pass examinations, to write badly, and to try to learn what the examiners require, so that he may draw the necessary winner from the lucky tub. A man cannot think unless he is given time to think. He will, of course, get time enough later when his brain is gone if he can then succeed in keeping body and soul together for the purpose. To take one instance. Is there not sufficient material in modern scientific surgery alone to keep a man looking, experimenting, reading, and thinking for a period of ten years or so; at the end of which time both he and surgical science will be the richer? Anyone who has researched in a subject knows that not only does he master that subject thoroughly and unconsciously but that he also masters all the surrounding subjects at the same time. I find that whatever real knowledge I possess has been acquired on my own account, quite independently of examinations from which, or from the system for which, I never learnt anything, except perhaps by emphasis or by experience imparted by the examiner. Personally I never wish to be thought any the better of by anyone for having passed any examination whatever, but I do most decidedly wish to be thought well of for having tried to learn the principles of diagnosis and treatment and for having tried to learn their applications and limitations on my own account whenever I could screw a little spare time out of the system. The stigma which condemns the whole thing, lock, stock, and barrel, is the saying common among one's tutors: "Get qualified; you will never learn anything till you are."

The remedy for this state of things is a partial return to the apprenticeship system with, say, two-thirds of the total number of marks for the apprenticeship and one-third for the examination; a great cutting down of the preliminary subjects; the abolition of compulsory lectures; the retention of demonstrations and clinical lectures with voluntary attendance; and, perhaps, a lengthening of the period of clinical study. Such a system would save so much of a man's time that he would be able to acquire three times the knowledge in any given period. He would learn very many things he never now learns and he would be in such a position at the end of it that he could record with facility any case or method of treatment with its results in a clear and readable manner. He would be able to manage his patients and to treat their diseases. His mind, instead of being a morass, would be scientific and all this would be acquired pleasantly and without any undue strain. The gain to the patient and to medical science would be great. At present the age at which a man's mind is most impressionable is spent in filling it with that which will never be of use to him. That the proposed system would be good is shown by the cases of medical men who have taken up the study late in life and have had no previous knowledge of the cramped little corner of preliminary medical science but who only have their own general education and wisdom. These men often pass all the examinations without a failure and turn out much more capable and much less cut-and-dried than the average student does.

I am, Sirs, yours faithfully,

Jan. 7th, 1906. M.A., M.B.

SEATS IN THE WITNESS-BOX.

To the Editors of THE LANCET.

SIRS,—In criminal courts of law a prisoner is allowed, as a rule, to sit down in the dock in a trial of any length and some judges permit it on all occasions. Witnesses, however, are usually expected to stand in criminal and civil courts and we are all of us familiar with the stereotyped phrase of the reporter who narrates how a witness appeared faint when in the box and was "accommodated with a chair." I am not a medical man and would ask those better able to judge than myself whether the standing position may not place a large number of witnesses who do not faint or show

any signs of doing so at a disadvantage physiologically. I take it that the advocate would always prefer to stand but this position is different, and as a witness I believe I should find myself better able to collect my thoughts and to answer clearly and coolly the questions put to me when seated. Is not this to some extent accounted for by the different effect of the two positions upon the circulation and upon the supply of blood to the brain? Of course, a cross-examining counsel would prefer a witness not to be able to think too coolly before answering him, but is not a witness (who should be assumed to be guiltless of perjury or even of inaccuracy until cross-examination has convicted him of it) entitled to be in the position that will enable him to tell his story best? If a witness asks for a seat I do not suppose that he is likely to be refused one but if it is better or more just that he should have one he ought to be supplied with it without having to ask and as a matter of course. I should like to know whether there is any, and what, medical aspect of the question.

I am, Sirs, yours faithfully,

OUTSIDE THE BAR.

THE BATTLE OF THE CLUBS.

(FROM OUR SPECIAL COMMISSIONER.)

(Continued from p. 60.)

Formation of the Macclesfield Medical Society.—A Partial Strike.—The Ostracism of Imported Medical Practitioners.—Suggested Remedies.—The Need of a Universal Pronouncement against Tenpenny Annual Contracts.

THE members of the medical profession who are in practice at Macclesfield have not silently endured the affront implied by the terms for contract work imposed by the burial societies. Throughout it has been felt that a payment of 10*d.* a year was an insult and that the acceptance of such conditions must lower, and indeed has lowered, the profession in the estimation of the public. But the difficulty was to give an articulate expression to this dissatisfaction and to find practical means to put an end to the scandal. Consequently, it was not till Jan. 20th, 1902, that the medical practitioners of Macclesfield gathered in force at the local hospital. Mr. J. B. Hughes presided and it was determined to form a Macclesfield Medical Society. This was not to be a society merely for social intercourse or the reading of scientific papers. On the contrary, the very first subject which this newly constituted body discussed was the question of club practice. Other matters were also taken into consideration. Thus, at the meeting held on April 18th, 1902, it was proposed to call attention to the practice of kissing the Book and the risk of thus spreading disease. Then again there was a discussion on the advisability of rendering the notification of tuberculosis compulsory. The question of club practice was not raised on that occasion as the principal practitioner concerned was absent. But at the third meeting held in the ensuing month of October there was a great debate on club practice. Much was said concerning a minimum scale of fees. One of the members was even intrusted with the somewhat difficult and delicate task of drawing up such a scale. Then the society had a dinner in December. But, after all, it was not till the month of May, 1904, that something was really attempted.

About four years previously and without the support of any organisation, the medical officer of one of the burial societies had tendered his resignation, with the result that some slight improvement in the conditions of contract work was granted. On the present occasion—that is, in May, 1904—this same medical officer and another also working for the burial societies resigned. The Macclesfield Medical Society approved of their action and it was proposed that negotiations should be opened with all the clubs of the town so as to obtain adequate payment. But the burial societies were not this time in the least disposed to yield. On the contrary, the resignation of one of the medical officers was at once accepted. The burial societies described the letter which they had received from their medical officers as a revolver levelled at their heads and determined, once and for all, to stamp out all such signs of rebellion among the medical men in their employment. Thereupon the burial societies advertised for a medical officer in some of the Birmingham, Manchester, and Yorkshire leading daily papers. The Macclesfield Medical Society immediately sent counter advertisements to the same papers advising medical men not to come or urging them first to communicate with the secretary of the local medical society. A good many medical men did communicate with the medical society and on hearing the facts of the case honourably refrained from applying for the post. On the other hand, no less than 33 applications had been made to the burial society. Some of these applicants went to Macclesfield and called on the secretary of the medical society. In spite of all these efforts, a medical man from outside was imported and took the place of one of the medical officers who had resigned. The Macclesfield Medical Society was naturally indignant and agreed to ostracise the newcomer. But the newcomer did not remain long; he went away in about a year's time. His successor, who is supposed to have bought the practice, now makes a grievance of being ostracised and professes to have been unaware that there had been any dispute.

In regard to the other medical practitioner who had given in his resignation the position is somewhat weak. He used to be employed by both the burial societies but only resigned from one of them. In this the medical society supported him; yet his position was a source of great embarrassment to it, for if it was wrong to work for one of the burial societies it was equally wrong to work for the other. Naturally, the medical officer in question was urged to send in his resignation to both bodies but he objected on the grounds that if he did so he would have nothing remaining to live upon. Here, then, is a case where a strike fund was needed. But Macclesfield is a very small place and the medical society of that town only numbers 15 members and this small body, however generous each individual may be, could not be expected to raise funds sufficient to support a strike for any length of time. On the other hand, nothing has been gained, indeed, so far everything has been lost, by following a timid, half-hearted policy. The medical officer who feared to resign from both burial societies only retained for a short time the second society from which he did not retire. This society, warned by these events and acting prudently from its point of view, has set to work to import yet another practitioner. In the far west of Ireland it found a medical man who was willing to come and he was installed in office on Jan. 1st this year. So that the medical officer who was afraid to resign has now been told that he must go. Of course, every effort was made to prevent the arrival of this interloper from Ireland. Not only did the secretary of the Macclesfield Medical Society write to him but Mr. B. W. Housman, as secretary of the division of the local branch of the British Medical Association, also wrote. The whole circumstances of the case were clearly explained and then a similar letter was sent to the candidate's father. Nevertheless, the allurements of 10*d.* a year from each member of a burial club seemed to be so great that all these warnings have been set aside. Professional dignity and the esteem of the members of the profession are considered of less value than three-quarters of a farthing per month from every member on the medical officer's book. Less than one farthing per week is enough, it appears, to compensate the unpleasantness, not to say the disgrace, of being ostracised by fellow practitioners. As it is absolutely impossible for any medical man to earn enough to live upon if he only receives about 10*d.* per year from every person whom he undertakes to attend efficiently when ill, the practitioner who accepts such terms certainly merits the most thorough boycott that can be inflicted. No medical practitioner, if he is to give the necessary time and attention to his patients, should have more than about 1500 club members on his books. Even stretching the point to the utmost, there certainly should not be more than 2000, and, at the Macclesfield rate of 10*d.* per annum, that makes 20,000 pennies, or a trifle more than £83 per annum. It is not necessary to insist on the insufficiency of this sum.

Of course, this is not the way in which the matter is put forward by the burial societies. They advertise for a medical officer, offering a certainty of £200 or £250 a year and the prospect of private practice as well. These societies do not add to this alluring bait any indication that this larger sum is only paid on condition that the medical officer undertakes to look after a population two or three times larger than that which should be allowed and, further, that the consequences of thus undertaking more than he can do are such as almost entirely to obliterate any prospect of obtaining private practice. As the medical officer receives his 10*d.* per annum whether he is called in or not it

is actually to his benefit not to be sent for by the patient. In such circumstances what can be expected? Is it surprising to hear the people at Macclesfield say, "Oh, he is only a club doctor," and their one ambition, when they can afford it, is to consult someone who is not "a club doctor." What is done in effect is to make use of the club or burial societies' medical officers for trivial ailments. But when there is a dangerous illness the members of the club have so little respect for, or confidence in, their medical officer that they consult private practitioners when they can afford to pay the usual medical fees. Then, again, the fact that so many members of these societies or clubs do pay these fees proves conclusively that there is an abuse, that a wage limit is not imposed, and that members are admitted to participate in the medical aid when they are in a position to pay proper medical fees.

The medical practitioners are not alone in complaining of this abuse. The dispensing chemists declare that they have lost many customers who used to pay, and pay well, for the prescriptions which they brought in. Now they have joined a society or club and get their medicine for the few pence that they pay per annum. Many of these people are well dressed and far from being only poor labourers are sometimes tradesmen and others engaged in remunerative business. Of course, this question of abuse is not peculiar to Macclesfield. Throughout the country a clearly defined wage limit is even more necessary than an improved rate of payment. It does not matter how small the remuneration so long as the sufferer is really poor and cannot pay more. But it must be understood that the attendance on such cases is a work of charity. At Macclesfield during the 12 months ending Sept. 30th, 1905, a dispensing chemist, who had contracted to make up the medicaments required by one of the burial societies, found that he had received during the year 8200 prescriptions. For these he was paid a fixed sum of £100. He thereupon demanded an increase of £30 and was ultimately granted an addition of £20 per annum. It is obvious that the members of one single society did not need all this medicine on charitable terms. Yet a person who only pays 10*d.* per annum for medical advice cannot consider himself otherwise than as in the receipt of charity.

There are some other clubs in Macclesfield besides the burial societies and, though the case against them is not so scandalous, they pay much less than the same organisations in other towns. Thus, I was assured that the Oddfellows only pay 2*s.* 6*d.* per annum to their medical officer and there is a society known as the North Road Friendly Society that only pays 3*s.* 6*d.* though its members are scattered over an area of five or six miles. In no case does there seem to be any attempt to impose a wage limit. Thus we find at Macclesfield the grievances that exist elsewhere plus the extra evil that the payments made to the club medical officers are so much below the sums usually given as to constitute a genuine scandal. In such distressful circumstances it is only natural to inquire if any remedy has been proposed. The local practitioners, as already related, have taken the matter in hand but they have not succeeded in preventing the importation of outsiders. The Stockport, Macclesfield, and East Cheshire division of the Lancashire and Cheshire branch of the British Medical Association has issued a list of recommendations. They are lengthy, like the title of the organisation by which they have been formulated, but they do not contain a single word to indicate what is to be done to prevent the competition of practitioners imported from Ireland and elsewhere. It is comparatively easy to say that contract work should be under the direction of the medical men themselves and should constitute a public service open to all medical practitioners on identical terms, while at the same time a strict wage limit must be imposed on all persons who subscribe. These excellent schemes are as water on a duck's back so far as the existing clubs are concerned. At Coventry a public medical service was established on these lines long before the British Medical Association so modified its constitution as to be able to take such matters in hand. The endeavour made by the practitioners of Coventry is worthy of the utmost praise and the closest study, but the great club against which they fought exists still. At Southampton and elsewhere similar medical public services have been organised and great good has resulted therefrom; but nevertheless clubs have continued to exist in those towns and are likely to continue so long as the importation of practitioners remains a comparatively easy matter. This really is the very foundation of the question so far as the practical means of action are concerned.

If a public medical service was organised by the Medical Society of Macclesfield it is inconceivable and, indeed, would be very wrong that the members enrolled should be charged less than 1*d.* per week. This is the lowest sum admissible. If a person cannot pay 1*d.* per week for medical advice and medicine when he is ill, then he must be referred to a pure charity or to the Poor-law authorities. Yet at Macclesfield would it be possible to induce any considerable number of those who are now paying only 10*d.* a year to pay 4*s.* 4*d.* a year? Certainly a great many of these people are dissatisfied with their tenpenny club medical officer and if it was found that local practitioners of good repute and who were not club medical officers nevertheless consented to give their help to the public medical service it might make a considerable difference. A model institution might thus grow up but the old societies with all their abuses, though a little weakened, would remain all the same. The local branch of the British Medical Association proposes another alternative or temporary set of measures. These consist of the suggestion that all the practitioners of the district should agree as to the terms which they will accept from the existing clubs and should also establish the "conditions of admission to attendance under contracts, including provisions with respect to the economic position, age, and health of the candidate." In briefer parlance, this means the imposition of a wage-limit, the one thing of all others that no club or friendly society will accept. Under existing conditions it might be easier to establish a public medical service than to reform the existing institutions. But in either case the practical point is how to prevent the importation of practitioners who are ready to undersell their colleagues and to break up all attempts at reform.

The local medical society, though it has enrolled all the practitioners of the town, is, as has been pointed out, but a small body, for there are only 34,635 inhabitants at Macclesfield. Of these it is said that from 22,000 to 25,000 are members of the various clubs, so that there does not remain much for the private practitioner to do. Fortunately a considerable number of well-to-do Manchester families come to live on the healthy and bracing hills which surround Macclesfield. The decline of the silk trade has caused a great fall in house rent and this serves to attract a few people. These newcomers are the best paying patients. Nevertheless, what with the prevailing poverty due to the decline of the silk trade and the enormous proportion of the inhabitants who belong to medical aid organisations there remains very little private practice available. In view of these circumstances the Macclesfield Medical Society needs outside support. Indeed, no local body alone can fight such a battle. Such outside help will be more efficacious if the Macclesfield Medical Society is affiliated to the other medical unions engaged in the same struggle. In this part of England these bodies have been grouped together by the Manchester Medical Guild. This organisation has a practical experience, now extending over a good many years, of actual contests, of genuine battles, with the clubs. The experience thus acquired would be very valuable to the Macclesfield practitioners.

But the Macclesfield practitioners also need the support of the profession at large. Therefore their case should be submitted to the judgment of larger bodies than their own local organisation. Some steps in this direction have been taken. On Dec. 21st last the Cheshire and East Lancashire branch of the British Medical Association met at Stockport and passed a resolution requesting the association to send a representative to Macclesfield to inquire into the club practice in that town. The meeting at Stockport also recommended the Macclesfield Medical Society to affiliate with the Manchester Guild. Thus it is very probable that the Macclesfield practitioners will come into line with a fighting element of the profession which has already done much to raise the dignity, and to improve the material conditions of life among, a very large class of medical men in different parts of the country.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

School for Crippled Children.

A GOOD deal is heard of the high education rate and no doubt it is a serious addition to the general rate burden under which Manchester, like too many other places, is

groaning, but a good word may be said for the residential school for crippled children at Swinton. 30 of them are comfortably housed, well fed, well tended, and taught "within the measure of their capacity." The house stands in its own grounds of eight acres and was taken by the education committee on lease, but the experiment has been so successful that the committee is going to purchase the estate. Arrangements are now being made for an extension which will give accommodation for 35 more children.

Manchester's Feeble-minded.

The Royal Commission has appointed Dr. H. Ashby and Dr. Melland to make inquiries as to the number of feeble-minded persons in Manchester and the district. The circular letter from the Local Government Board making this announcement conveys the hope that the guardians will give the above-named gentlemen every assistance in their duties, which help they have undertaken to give.

Jan. 9th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

University of Liverpool.

THE reports from the 14 colleges which participated during the year ending March 31st, 1905, in the annual grant, amounting to £54,000, made by Parliament for "University Colleges" in Great Britain and from the three colleges in Wales, which receive a grant of £4000 each, have just been issued by the Board of Education as a blue-book. With regard to the University of Liverpool the number of arts, science, law, and engineering students registered during the session 1903-04 was 542, 358 being male and 184 being female. The medical school students numbered in the winter session 158 and in the summer session 125. The number of students who passed the university medical degree examinations was 27.

The Medical Supervision of Midwives.

Considerable discussion took place at the city council upon a recommendation of the health committee that Dr. A. A. Mussen, assistant medical officer of health, should be appointed to undertake the general supervision of midwives in the city under the Midwives Act, 1902, for 12 months, at a salary of £100 a year in addition to his present salary as assistant medical officer of health. Dr. R. Caton and others emphasised the great importance of an appointment such as the one proposed. Opposition was offered to the proposal on various grounds and an amendment was discussed that Dr. Mussen should be appointed to the position at a salary of £50 a year. The committee's recommendation was, however, confirmed.

The New Superintendent of the Fazakerley Hospital.

The port sanitary and hospitals committee's recommendation to appoint Dr. Claude Rundle as medical superintendent at the city hospital, Fazakerley, at a salary of £400 per annum, increasing by £50 yearly to £600, with house, coal, and lighting, was confirmed at the last meeting of the city council.

Jan. 9th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

The Leeds Sewage Schemes.

WHEN in 1900 the Leeds corporation purchased the Gateforth estate near Selby for £88,000 it was confidently anticipated that the question of the disposal of the sewage of the city would be satisfactorily solved by the establishment of a sewage farm. It will be remembered that this scheme involved the laying of a conduit some 14 miles long and that the opposition to this was so strong that the corporation Bill was thrown out by a committee of the House of Lords. As was mentioned in this column on May 13th, 1905, a modification of this scheme had been drawn up, under which it was intended partially to deal with the sewage at Knowesthorpe, within the city boundary and at the present site of the sewage beds, and then to carry the modified effluent in steel pipes to Gateforth. This scheme would be opposed by the authorities at Selby who have recently sunk wells nearer to the Gateforth estate than any formerly existing, and there are also engineering difficulties in the way. Very strong pressure has for long been steadily brought to bear on the Leeds corporation by the West Riding rivers board to make satisfactory arrangements. Mr. J. R. Ford, the chairman of the sanitary committee, appeared as one of a deputation to the rivers board and pointed out that the Leeds corporation had had difficulties to contend with greater than those experienced by any other corporation in the kingdom. He indicated that the Gateforth scheme would have to be dropped but that negotiations were going on for the acquisition of the necessary land elsewhere. These negotiations have resulted in an entirely new scheme being worked out. This was discussed at length at a recent meeting of the city council and adopted. The Hon. Mrs. Meynell Ingram, who was one of the 20 opponents to the Gateforth scheme and who was also unwilling to sell any of her land at Temple Newsam for sewage purposes, left the estate of Temple Newsam on her death to the Hon. E. F. Lindley Wood who was approached by the corporation, and it was finally agreed that in respect of the sum of £231,000 the corporation should become the possessors of 1000 acres of land. The price was to include the right of user of mineral railways giving access to the North-Eastern and Great Northern and the use of a basin of the Aire and Calder Canal, as well as the acquisition of the minerals under the existing works at Knowesthorpe and under 150 acres of the estate. It was estimated that the capital cost of the scheme, including the payment to the owner of the estate, would amount to £1,900,000 and that the working charges would reach £85,410, including sinking fund and interest. It was felt that the cost of the land was extremely high, and, indeed, some members of the corporation expressed themselves very strongly on the matter, but, on the other hand, as the corporation desired to avoid the resource to arbitration involved by compulsory purchase by Act of Parliament, and as it did not regard any modification of the Gateforth scheme as likely to prove satisfactory, the recommendation of the committee was approved without a dissentient. The purchase is subject to the corporation obtaining powers in the session of Parliament of 1907 to use the grounds for the purpose of sewage disposal. The scheme will, of course, involve a great enlargement of the present sewage works at Knowesthorpe.

Jan. 9th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Parliamentary Elections for Scottish Universities.

THE four Scottish Universities return among them two Members to the Imperial Parliament, one being elected by Edinburgh and St. Andrews and another by Glasgow and Aberdeen. Both groups are to be fought this year and in each case a medical candidate is opposed by a layman, while party politics must complicate the medical voting. At Edinburgh and St. Andrews the sitting Member, Sir John Batty Tuke, whose medical work is known to all, is opposed by Mr. St. Loe Strachey, the editor of the *Spectator*, who stands as a Free Trader. In the Glasgow and Aberdeen constituency there has been no contest since 1880 but at the forthcoming election everything points to a keen contest. One candidate is Sir Henry Craik whose wide knowledge of educational matters will no doubt carry great weight, and who stands as a Tariff Reformer. The other candidate is Professor W. R. Smith who has been brought forward by a section of the electors who feel that it is desirable to have as their representative a member of the medical profession and a graduate of one or other of the universities which he represents, both of which conditions Professor Smith fulfils.

Excavations at Glasgow Royal Infirmary.

Notwithstanding the opposition that is being met with from various quarters the directors of the Royal Infirmary are proceeding steadily with the preparations for carrying out the reconstruction scheme. The new plans necessitate the encroachment on ground formerly used as a cemetery. For many years this ground has formed a bright-green patch adjoining the infirmary and there the convalescent patients had their daily airing. It was conveyed by the corporation

to the Royal Infirmary and has ceased to be used for burying purposes for more than 70 years. The corporation authorities have powers under Act of Parliament to remove the remains and convert the ground to whatever purpose they desire and it is these powers which are now being exercised by the managers of the infirmary. For some time excavations have been carried on and the remains have been re-interred in another cemetery. Everything was done with a due regard for human sentiment and the owners of lairs have all expressed satisfaction with the arrangements of the management of the infirmary. The soil has been examined by the city bacteriologist and by the bacteriological staff of the infirmary, but only such micro organisms were found as are likely to exist in a flower garden or in a ploughed field.

Anthrax in Glasgow.

Last month a case of anthrax occurring in a horse was reported in Glasgow. It is comparatively rarely that a horse is attacked and this seems to have been the first case of the kind reported in Glasgow. A much more deplorable incident has come under the notice of the health committee. A man in Ireland purchased a carcass at 7*s.* 6*d.* less than the price of the hide, cut it into quarters, and sent it to Glasgow for consumption. The veterinary surgeon to the corporation on examination found that the meat had come from an animal which during life had been affected with anthrax. Unfortunately, owing to technical legal difficulties, it is impossible to deal directly with the offender but the circumstances of the case have been communicated to the appropriate public health authority in Ireland and it is hoped that it will take steps to deal with the man who consigned the carcass.

Cases of Beri-beri at Glasgow.

On the arrival of the China Mutual Company's steamer *Yangtze* in the Clyde last week from Liverpool in light trim it was reported that there were three cases of beri-beri among the crew. Two of the men had nearly recovered but the third was in a serious condition. While the vessel was at Amsterdam one of the hands succumbed to the disease.

Purves v. *Carswell and Gilchrist.*

In commenting upon this extraordinary case last week it should have been mentioned that the interests of the successful defendants were watched over by the Medical and Dental Defence Union of Scotland.

Jan. 9th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Nursing in the North Dublin Union Infirmary.

THE nursing question in the North Dublin workhouse infirmary has engaged public attention for some months. On Oct. 19th, 1905, a motion in favour of the discontinuance of pauper nursing in the union was proposed by Dr. J. C. McWalter and carried. Later Dr. Caleb J. Powell, one of the visiting physicians, brought forward a scheme for the drastic reform of the present condition of things, including the abolition of all pauper nursing. He proposes, moreover, that a school for 30 probationer nurses should be established in connexion with the union, that a separate building should be provided for their accommodation, and that a qualified superintendent nurse should be appointed to see after them and to instruct them in their duties. The scheme seems to have met with very general approval but the usual financial difficulties have intervened and caused much delay in its adoption. At a meeting of the North Dublin union held on Jan. 3rd the matter was again fully discussed when Mr. Goggins proposed the following motion:—

> That the recommendation of the committee of doctors as regards nursing be adopted and that the question be again referred to the medical officers to draw up details and submit same to the board.

Dr. E. C. Bigger, medical inspector under the Local Government Board, was present and said that he came there specially to emphasise the state of things which existed in the workhouse. There was no doubt whatever that the present arrangements were very bad and it was absolutely necessary that a change should be made in the existing state of the nursing conditions. He said that the postponement of the scheme even for two months would be very regrettable. Mr. Goggins's motion in favour of the adoption of the changes advised by the committee of medical officers was ultimately declared carried.

A Medical Man appointed High Sheriff of the County Armagh.

Mr. Joseph Mansergh Palmer, F.R.C.S. Irel., &c., was sworn in as High Sheriff of Armagh on Jan. 3rd.

Dr. Thompson, M.P.

Dr. Edward C. Thompson, M.P., of Omagh, has addressed a letter to one of his constituents in which he states that he will not be a candidate again for the representation of North Monaghan.

The Royal Victoria Hospital, Belfast.

At the first bi-monthly meeting this year of the board of management of the Royal Victoria Hospital, Belfast, held on Jan. 3rd, it was announced that the Lord Mayor (Right Hon. Sir Daniel Dixon, Bart., D.L., M.P.) had subscribed £500 to name the "Dixon" bed in one of the wards. Mrs. Pirrie gave £25 for the Christmas dinner. The Lord Mayor's bed is the seventh definitely subscribed for (£3500) during 1905. A very valuable electric bath has been presented to the hospital by Mr. John Dowling.

Royal University Senate.

At a recent meeting of the council of the Royal University Graduates' Association a strong memorial was drawn up and forwarded to his honour Judge Shaw requesting him to withdraw his resignation of his seat upon the Senate of the University. In reply Judge Shaw regretted that he could not see his way to comply with the request. The council in these circumstances requested Dr. John Campbell of Belfast, president of the association, to allow himself to be nominated as a candidate for the vacant seat and he has consented to do so. Dr. Campbell will in every sense be a very strong candidate.

Medico-Political Affairs.

Now that the General Election is upon us the medical profession in Ulster, through a small subcommittee of the Belfast division of the British Medical Association, are sending the different candidates a series of questions drawn up under the authority of the medico-political committee of the British Medical Association. It has also been suggested that each candidate shall be asked if he is willing to support a movement to add to the Royal Commission on the Poor Laws a member from the medical profession in Ireland in practice and not an official of any board.

Belfast Asylum.

At the monthly meeting of the Belfast Asylum committee held on Jan. 8th attention was drawn to the crowded state of the Grosvenor-road old asylum, and as some of the board of management are in favour of moving all the patients to the new institution at Purdysburn it was decided to call a special meeting to consider the whole matter of providing further accommodation for the insane. It is interesting to find that in the estimated expenditure for 1906 the sum asked for—£21,000—is £1500 less than in the previous year, which indicates the efficient and economic way in which the funds were administered last year.

Jan. 9th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

"Anti-tuberculous Vaccination" of Young Bovine Animals.

THE Society of Veterinary Medicine has just carried out a research at Melun on the antituberculous vaccination of young bovine animals after the method of Professor von Behring. The research was in the hands of Professor Vallée. On Dec. 5th, 1904, 21 calves, aged from four to six months, were tested with tuberculin and were found not to react. They were then carefully housed so as to be out of the way of any contagion coming from outside during the course of the research. On Dec. 11th they were all intravenously inoculated for the first time with Behring's serum. One of them died at the end of two months from an intercurrent malady but the remaining animals were in perfect health and grew in a normal fashion. On Feb. 13th, 1905, these 20 animals were again tested with tuberculin. Four animals reacted to this, which is not to be wondered at, as the bacilli which had been previously inoculated had not been able to be absorbed without bringing about the formation of microscopic lesions sufficient to give rise to the tuberculin reaction. Most probably all the calves would have reacted if they had been tested with tuberculin at a date nearer the

initial vaccination than was the fact. On March 12th, three months after the first inoculation, the 20 calves received a second inoculation. At the beginning of the month of June all these animals were again tested with tuberculin. Only one reacted, and this one was separated from the rest of the animals. Four other calves were also put on one side with a view to test the duration of the immunity. On June 15th the 15 remaining animals were tested as follows: six were inoculated intravenously with four and a half milligrammes of fresh culture of exceedingly virulent bovine tuberculosis bacilli, seven were inoculated subcutaneously, and two were placed in the same byre with animals which were known to be tuberculous. Controls which had not reacted to tuberculin in an equal number to the inoculated calves were placed under the same tests. Very shortly most of the control calves showed acute symptoms of tuberculosis and between 30 and 40 days later three of them which had been inoculated intravenously died. The following are the actual figures: of the controls tested intravenously three died with marked pulmonary lesions between 30 and 40 days after the inoculation. The other three on being examined after death showed tuberculosis. Among the calves which had been inoculated with the serum five remained absolutely well. The sixth, which was suffering from pasteurellosis[1] at the time of inoculation and was therefore in a state of low resistance, showed five or six tubercles disseminated in the bronchial mediastinal glands. There were no visceral lesions. Among the calves which had been inoculated subcutaneously three of the controls showed marked lesions of the prescapular glands on the same side as the inoculation; four showed in addition generalised lesions of the lungs and bronchial glands. Among the inoculated calves five showed no lesions in the glands close to the point of inoculation. In one other the prescapular glands were tuberculous, and the last one showed marked tuberculous infection of these glands. Among those which had been placed in the same byre as the tuberculous animals both the controls were affected with general tuberculosis, evidently contracted after infection by the digestive tract. The inoculated calves escaped. We may then conclude that the antituberculous vaccine method of von Behring is not dangerous, since only one of the animals inoculated in this fashion reacted to tuberculin within a certain period after the second inoculation. In the course of these experiments the animals were very highly tested. One of the controls received in the lung at one time four and a half milligrammes of a most virulent culture, one strong enough to kill within 30 days a calf aged two months in a dose of two milligrammes. So severe a trial would never be realised in ordinary practical conditions. Even when the inoculated calves did show signs of failure the lesions were next to nothing compared with those suffered by the controls. Finally, both the inoculated calves came off victorious in the test of being put in the same byre with tuberculous animals, which is the usual method of contamination. It may then be concluded, in accordance with Professor Vallée's opinion, that it is experimentally possible to immunise young bovine animals against tuberculosis but that further experiments are needed to decide the duration of the immunity.

The Mortality from Lead Poisoning.

M. Bertillon has recently been making some researches into the mortality caused by lead among workmen whose employment necessitates their handling the metal or its salts. At the meeting of the Society of Public Medicine and Sanitary Engineering, which was held on Dec. 20th, 1905, he gave the statistics for Paris for the period 1885–97 and for England for the period 1880–92. The figures showed that for both Paris and England the general mortality for all ages above 20 years is lower than that of the workers such as painters, printers, file-makers, and the like, who handle lead. In workers of these classes the mortality increases with the age, a fact to be explained by the accumulation of lead in the system. In some other figures dealing with causes of death, such as pulmonary tuberculosis, alcoholism, and cancer, M. Bertillon showed that these causes act with greater intensity on workers in lead than on the rest of the population. He concluded by expressing his astonishment at the altogether different results which had been arrived at by M. Treille. He explained these differences by an error in calculation and by the fact that the calculation was founded on erroneous information. The error in calculation consisted in the fact that M. Treille, in order to obtain the mortality among painters relative to the general mortality, had divided the number of deaths among painters from 20 to 30 years of age by the number of deaths among the total general population instead of among the total general population of the same ages. The erroneous information consisted in the fact that the number of painters was estimated at 20,605 insted of 13,500, which is about the real figure.

The Treatment of Biliary Lithiasis.

At a meeting of the Society of Surgery held on Dec. 20th M. Terrier stated that in cases of biliary lithiasis drainage of the biliary tracts gave excellent results. He gave particulars of five cases. The first was that of a woman who suffered from a calculus in the common duct and from angeiocholitis. The gall-bladder was incised and the calculus was extracted. The wound was drained and the patient recovered. In the second case the gall-bladder was removed. The common duct was opened and on passing a sound a calculus was found impacted in the hepatic duct. This was removed, the wound was drained, and recovery followed. In Case 3 a fistula remained after an operation for gall stones. The gall-bladder was opened, the common and hepatic ducts were sounded, and a calculus was found in the latter. It was extracted and the wound was drained but the patient died from cardiac trouble. At the post-mortem examination a calculus was found in the common duct which had escaped recognition. The duct was much dilated. Particulars of two other cases were given in which recovery had followed similar procedure.

Depôts for Egg Yelks and Albumen.

The Council of Public Health and Hygiene for the Department of the Seine has just adopted the conclusions set forth in a report by M. Parisot upon depôts for egg yelks and albumen. The conclusions of this report are as follows. It is decided: 1. To renew the regulation previously set out by which depôts for egg yelk in bulk, preserved by means of antiseptics and destined for industrial purposes, are classified as establishments which are dangerous, unhealthy, or a nuisance of the third class *(établissements dangereux, insalubles ou incommodes; 3me classe incommodité pour le voisinage)*. 2. To compel all industries using preserved yelks of eggs to label the receptacles in which such yelks are stored with large and clearly legible tickets showing that the destination of the contents is distinctly industrial, so as to avoid confusion. 3. To forbid absolutely the selling in the same place of preserved yelks of eggs and fresh eggs or other articles destined for food. 4. To forbid absolutely the keeping in any establishment preparing or selling articles of food of egg yelks preserved with antiseptics.

Action of Iodine Preparations on the Circulation.

At a recent meeting of the Academy of Medicine M. Pouchet read a paper upon the above subject in the course of which he showed by means of results of a series of experiments that iodine and the iodides on the one hand and fresh thyroid juice with iodated albumins on the other hand have inverse action upon the heart and the extra-cardiac nervous apparatus. The first group of these substances is hypertensive and the second group is hypotensive in medicinal doses. In toxic doses both groups bring about hypotension by their depressing action upon the myocardium and by paralysis of the nervous system. Iodides should not be regarded in practice as cardiac medicaments properly so called. Their action upon the circulation in medicinal doses is only secondary and subordinated to their effects upon the lymphatic system and the blood. M. Pouchet considers in addition that iodated albumins and preparations of thyroid gland are difficult to use in practice by reason of their instability, and he also considers that their use ought to be considered much more carefully than is the case. If their properties as regards vascular pharmacodynamics are weakened by contact with air and light, the same is by no means the case with regard to their toxic properties and their actions upon the nervous system and upon nutrition have been the cause of numerous disagreeable consequences which have very often been put down to the account of the disease itself.

Actinomycosis of the Lobe of the Ear successfully treated by Radium.

At the meeting of the Société de l'Internat held on Dec. 28th M. Pochon recounted the case of a girl, aged

[1] Pasteurellosis is an infectious disease of young animals consisting of a kind of hæmorrhagic septicæmia. It is very common in calves, the point of infection appearing to be the umbilical cord.

14 years, who suffered from an ulcer on the lobe of the left ear. The growth was of about the size of a hazel-nut and it had apparently become implanted upon an impetiginous patch which had appeared where the lobe had been pierced. Characteristic yellow coloured granules were seen in it which upon microscopic examination proved to be the typical ray fungus of actinomycosis. Daily applications of radium rays were made, the sittings lasting from ten to 15 minutes. After the first few sittings no more granules were seen and at the end of one month the patient was considered to be cured. No recurrence has taken place up to the present.

Jan. 9th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

A New Hypnotic.

Professor Fischer of Berlin and Professor von Mering of Halle have recently announced a new hypnotic compound termed proponal which is allied to veronal. It is a colourless crystalline substance soluble in 70 parts of boiling water and 1640 parts of water at 20° C.; it is, however, very soluble in alkaline fluids. It was administered in 20 cases of wakefulness in doses ranging from 0·15 to 0·5 gramme, the result being that sleep occurred in from 15 to 40 minutes and lasted from six to nine hours without undesirable symptoms. Compared with veronal a double dose of the latter compound is necessary to produce the same effect as proponal and it was remarkable that sometimes proponal acted more quickly than veronal, probably because being soluble in alkaline fluids it was more easily absorbed in the intestines. In some cases it was observed that pain was relieved by proponal, so that it was efficacious in cases where veronal was of no use. The administration of proponal is therefore indicated not only in simple wakefulness but also in wakefulness complicated by pain. It is administered in the form of powder with water, tea, or an alcoholic beverage. Doses from 0·15 to 0·5 gramme are sufficient and it is not advisable to give more than the last-named amount.

Radiophor.

As the immense cost of radium preparations is a great obstacle to their therapeutic use, many attempts have been made to communicate radio-activity to other substances which might then to some extent answer the same purpose. Dr. Axmann of Erfurt has recently described in the *Deutsche Medizinische Wochenschrift* experiments by which he succeeded in making paper, fluids, and other materials radio-active. In the earlier specimens the radio-activity was rather small and, moreover, only of short duration, but finally a substance was obtained which not only has a radio-activity of sufficient strength and permanence but is also inexpensive. This product, to which the name of radiophor has been given, may be applied to any part of the human body—either under the skin or into growths or cavities; instruments such as probes, catheters, and needles may also be coated with it. The action of radiophor is, of course, most evident when it is applied to the skin. For this purpose small plates are made having a surface of about a square centimetre and are fixed to the skin by some such means as plaster or bandages. The reaction of the skin becomes visible after two hours, but for practical use the plate may be left in position for a period varying from several hours to three days, according to its degree of radio-activity.

Hygienic Shaving and Hair dressing.

According to the *Hygienische Rundschau*, quoted by the *Berliner Klinik*, a hair-dresser's establishment, fitted up in accordance with the principles of modern hygiene, was recently opened in Munich. Apart from the wooden handle, the brushes consist of an aluminium frame in which the bristles are inserted and which may be removed from the handle to be sterilised in steam. The combs are also made of aluminium and may be sterilised by steam or hot water. The razors and scissors are disinfected by brushing with spirit of soap. Pulverised soap is used and is put up in covered boxes so that the quantity required for each customer may be taken separately. The lather brushes are sterilised after being used and the soap is washed from the skin by sterilised pieces of linen. Powder is applied by tufts of cotton-wool held in wooden forceps. All the linen is sterilised after each time of using and the piece which is fastened round the customer's neck is prevented from touching the skin by a paper collar, which is put between them and is destroyed after being used. Now that attention has been drawn to the propagation of disease by the implements of the barber it is highly desirable that similar improvements should become general, especially as the expenses are said to be not much higher than in establishments conducted in the time-honoured fashion.

The Treatment of Sea-sickness.

Dr. Peters, one of the medical officers of the Hamburg-America Steamship Company, has suggested a method of preventing sea-sickness by means of a chair electrically vibrating. For that purpose several chairs of a special construction were placed on board the steamer *Patricia* by the Sanitas Electric Company. The seat is made to perform vibratory movements by electric power, the chair being connected with the electric supply of the vessel. The patient sits in the chair with his feet placed on a footboard and his arms resting on suitable supports and a rheostat is provided by means of which he is able to regulate the electric current. According to an article published in the *Deutsche Medizinische Wochenschrift*, the general state of the patients improved obviously under the treatment but only so long as they remained in the chairs. There is, however, no objection against leaving patients in the chairs for days, provided that they do not suffer from any form of heart disease.

Jan. 8th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Surgical Operations in Military Hospitals.

SOME regulations which came into force at the commencement of the present year relative to surgical operations in military hospitals will be likely to meet with the general approval of the medical profession. Hitherto soldiers of all ranks who were thought by the military medical authorities to require to be operated upon had no option but to submit and sometimes even a man's relatives were not informed either of his illness or of his death if the result was fatal. Since Jan. 1st, however, every soldier admitted into a military hospital must write, or must dictate to someone else, a message to his nearest relative informing him of the fact. If he is unable to do either of the two the hospital clerk must fill up a special form to be forwarded to the family and in urgent cases a telegram is sent. Furthermore, before submitting to an operation a military patient must sign a paper declaring that he consents to have it performed. In all cases of operations where risk of life or the loss of an important organ is involved the patient must be told beforehand and must give his express consent. Exception is made in cases of unconscious or anæsthetised men when delay or insufficient extension of an operation would be dangerous. Lunatics and men under 21 years of age may only be operated upon after the consent of their lawful representative has been obtained by the surgeons. Minor surgery is not affected by these new rules, such operations being left at the discretion of the surgeon. These modern views, which are slowly gaining a firm footing in the army, are the outcome of several private charges made against surgeons of not having informed the patients of the risk which they were running by submitting to the knife.

Poisoning by Potassium Chlorate.

At a recent meeting of the Clinical Society Professor Albrecht showed the intestines and kidneys of a boy, aged three years, who had been ailing for some time and had latterly suffered from violent diarrhœa and from stomatitis. Two days before his death he was given eight grains of potassium chlorate dissolved in three ounces of water. The dose was repeated the next day with the result that the boy became collapsed and died, his temperature going down to 97° F. and the pulse being 128 per minute for half an hour. The necropsy showed tuberculous changes in the lungs and mediastinal glands, a fatty liver, a large spleen, and catarrh of the intestinal canal. The colour of the blood was brown, like that of chocolate or tobacco juice; the skin was consequently yellowish-grey and the internal organs, especially

the brain and kidneys, were brown. The case was therefore one of methæmoglobinæmia produced by potassium chlorate and it was remarkable that so small a quantity as 16 grains was sufficient to cause death. Potassium chlorate, although for the most part harmless, has a very powerful effect on feverish and dyspnœic patients for whom it ought to be prescribed very cautiously. On the other hand, Professor Albrecht has known a man who by mistake had swallowed a saturated solution of the same drug containing half an ounce of the salt, but nevertheless suffered no worse effects than diarrhœa and blood-stained urine for a few days. It is probable, therefore, that a special idiosyncrasy is responsible for the cases of poisoning. I may mention that a few years ago a famous Viennese actor died in the same manner and that at the necropsy the cause of death was similarly found to be methæmoglobinæmia produced by a misadventure with the same salt.

Perforating Appendicitis in Infants.

At the same meeting Professor Albrecht showed some pathological specimens illustrating a very rare condition. There were two cases, in each of which the patient was an infant, four weeks of age, who died after a very brief feverish illness without a diagnosis having been made. The necropsy showed in both cases purulent peritonitis, with adhesions between the lower coils of the ileum and in the midst of the mass the perforated appendix vermiformis. The first of the two cases also showed an abscess between the liver and the kidney. The interest of these specimens lay in the fact that appendicitis at such an early age was extremely rare. There is only one case recorded by Bamberg and it is very remarkable that infants who generally swallow such quantities of secretions and exudations (derived from rhinitis, bronchitis, and pneumonia) should be nearly exempt from appendicitis. This seems to prove that preceding intestinal catarrhs are a predisposing agency in appendicitis, a hypothesis which explains the increasing morbidity in later years.

X Ray Treatment resulting in an Action for Damages.

A case that has aroused considerable discussion in Austrian medical circles recently came before the Civil Provincial Court at Vienna. The defendants were Dr. Eduard Lang, professor of dermatology at the University of Vienna, and Dr. Guido Holzknecht, lecturer on Roentgen therapeutics, and the plaintiff was a Mr. Karl Haas who sought to recover damages on account of ill-health which he attributed to a course of x ray treatment. In 1902 Mr. Haas was treated for psoriasis by Professor Lang and his then assistant, Dr. Holzknecht. Both medical men employed the x rays and the plaintiff alleges that under this treatment painful blisters formed, so that he had to undergo five operations from March to June, 1903, and for months was hovering between life and death. He further asserts that he was "terribly mutilated" by the x ray treatment and demands 40,000 kronen damages, 500 kronen for loss of employment and 4732 kronen for medical attendance—a total of 45,232 kronen, or about £1884. For the defence Professor Lang and Dr. Holzknecht maintain that the rays have proved particularly efficacious in cases of psoriasis, that the application of them in the plaintiff's condition was entirely justified, and that the symptoms complained of were chiefly due to an infection which, despite every care, could not be helped. The court adjourned the case for expert evidence.

Hæmorrhage from an Unusual Cause after Parturition.

A midwife in Vienna was recently brought to trial on a charge of neglect of duty and thereby contributing to the death of a primipara, 24 years of age, whom she had attended. It appeared that the child was delivered very quickly and that the subsequent bleeding had been very profuse; the placenta came away soon but as the bleeding continued the midwife resorted to very vigorous massage of the uterus which did not contract well. When a medical man arrived he found that the patient was almost pulseless. After two injections of ether he managed to trace the source of the bleeding, which came from a rent about an inch long and one-third of an inch deep between the clitoris and the orifice of the urethra. The cavities of the corpus cavernosum were clearly visible. The patient died before the rent could be sutured. As the midwife had neglected even the simple remedy of applying a compress to the bleeding spot the patient bled to death within half an hour. In such cases it is of vital importance to find the source of the bleeding. Similar instances have been reported by Schröder and Winkel but it is only of late that the books in use by midwives have contained a chapter dealing with such incidents, and it is therefore not surprising that the accused woman, who had been a midwife for 32 years, was quite ignorant of such a possibility. The court, however, found her guilty of gross neglect.

Death of Dr. von Kusy.

By the death of Dr. von Kusy the medical profession in Austria loses one of its most prominent and most useful members. The deceased, who had been ill for a long time, was President of the Board of Hygiene in the Ministry of the Interior and was the organiser of the system of hygiene and sanitation in force in Austria. His last important work was directed against cholera and cerebro-spinal meningitis in the eastern parts of the empire, where he succeeded in cutting short the threatened epidemics of these diseases.

Rupture of the Ileum.

Dr. Ranzi showed recently at one of the surgical demonstrations a man who, whilst lifting a load of three hundredweights, suddenly felt "something giving way in his belly" and fell down unconscious. When he was operated upon 14 hours later on account of abdominal symptoms and peritonitis a rent was found in the ileum, near the cæcum, and was sutured with silk. The after-history was quite uneventful, the patient making an excellent recovery in spite of the purulent peritonitis produced by the fæcal contents of the ileum. Such cases, if operated upon not too late, give an excellent prognosis.

Jan. 8th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Spinal Anæsthesia with Sulphate of Magnesium.

A COMMUNICATION involving principles that may be destined to prove of much importance was read by Dr. S. J. Meltzer before a meeting of the New York Academy of Medicine on Dec. 7th. It dealt with Dr. Meltzer's discovery of the fact that magnesium salts, and in particular the sulphate, have the property when applied to nerve tissue of exerting a profoundly inhibitory effect. Of the four main inorganic constituents of the human body, sodium, potassium, and calcium have been well studied as regards their action on muscle and nerve, but the effects of magnesium have been but little investigated. By an extensive series of experiments on animals Dr. Meltzer found that intravenous injections of very small doses of magnesium salts inhibit the respiration and cause paralysis of the entire body; local applications to nerve trunks block the conductivity and abolish the excitability of the nerves; subcutaneous injection produces deep narcosis with complete muscular relaxation, and subarachnoidal injection produces nearly immediate anæsthesia and paralysis of the posterior extremities. After a sufficient amount of preliminary work had been done the method was employed in human surgery. Twelve cases have so far been operated on under the sole or essential influence of the intraspinal injection of magnesium sulphate. The dose employed was one cubic centimetre of a 25 per cent. solution for each 20 pounds of body weight of the patient. In the first cases a small amount of chloroform was also administered, but in the later cases no additional anæsthetic was used. The best time for operation was found to be three or four hours after the injection. Sensation and motion return in from eight to 24 hours apparently without evil after-effects. One advantage said to pertain to the method lies in the fact that the dangers of anæsthesia from magnesium sulphate come practically only from the side of respiration, while heart action and pulse remain normal. It is circulatory failure that is most to be dreaded in the use of ordinary anæsthetics for the circulation is almost beyond control, whereas respiration is not so. Another field of usefulness of great promise that suggests itself for the method is in the treatment of tetanus. In a desperate case of this disease that had received 115 cubic centimetres of antitoxin without avail, the first injection of a solution of magnesium sulphate afforded great relief for 36 hours, and after a few more injections the patient was cured.

Death of a Prominent Gynæcologist.

By the death of Dr. Nathan Bozeman from apoplexy on Dec. 16 h the medical profession has lost one of the few remaining members of the early school of gynæcologists in this country. He was born in Butler County, Alabama, on March 25th, 1825, and received his medical degree from the University of Louisville in 1848. A year later he had begun his professional work in Montgomery, Alabama, where he was for a time associated with the widely known Dr. J. Marion Sims. It was while practising in this city that Dr. Bozeman developed new operations for vesico-vaginal and vesico-uterine fistulæ, which he later demonstrated in Europe. On his return to America in 1859 he removed to New Orleans and on the secession of the Southern States he entered the Confederate army and served in the medical corps until the termination of hostilities in 1866. He then established a gynæcological practice in New York city where he soon was accorded a place among the foremost in his specialty. In addition to devising many new operative procedures Dr. Bozeman invented numerous ingenious instruments and appliances, some of which are in use to-day. Among these are his uterine irrigator, knives, and scissors, various forms of vaginal depressors and speculums, dressing forceps, and a needle holder. He also perfected an operating chair for use with the patient in the knee-chest position. Dr. Bozeman was active in medical circles even after he had retired from practice and for many years was a prominent figure at the meetings of gynæcological societies.

A Death from Nitrous Oxide.

Fatal results from this anæsthetic are so unusual that it is of interest to note a recent instance reported in this city. The patient was anæsthetised by a dentist for the purpose of having an alveolar abscess opened but after the termination of the operation he could not be roused and died in half an hour. No contra-indication to anæsthesia had been discovered by the man's family physician who had given his consent to the use of the gas.

Medical Societies.

Within the last few weeks the formation of a number of new medical societies has been reported. A new urological society was organised on Nov. 22nd with the title of the New York Reno Vesical Society. Its purpose is the study of bladder and renal diseases and the membership is limited to 50. A society of general practitioners, called the West Side Clinical Society of New York, met for the first time on Dec. 1st last. About 40 of the railroad surgeons of Kentucky met recently at Lexington and organised a Railroad Surgeons Association which will hold its first meeting in June. A matter for much congratulation is the final coalition, after many vain endeavours to effect a union, of the two rival State associations of New York. About 20 years ago certain of the members of the Medical Society of the State of New York formed another organisation, the New York State Medical Association, but the differences of opinion which caused this defection from the parent organisation long ago lost their point and for some time efforts have been made to re-unite the physicians of the State in one society. The last legal step was taken on Dec. 9th and the formalities will be completed in time for the celebration of the 100th anniversary of the foundation of the Medical Society of the State, which will take place early in February.

Dental Surgeons for the Navy.

A Bill has been introduced in Congress to establish a service of dental surgery as an adjunct to the regular departments of medicine and surgery of the navy. It is proposed to have three grades, "assistant dental surgeon," "passed assistant dental surgeon," and "dental surgeon," the incumbents of which would be on the same footing in regard to rank, pay, and privileges as officers in the corresponding grades of the medical service.

Insanity in New York State.

The statistics of the New York Charities Aid Association reveal a somewhat encouraging state of affairs in regard to insanity in the State. The total number of insane persons committed in the last year was the lowest recorded in 15 years, for it was only 507, whereas in the year before it was 927 and the average for the preceding ten years has been 758. The total number of insane patients confined in public and private institutions on Oct. 1st was 27,408. During the past 12 months 1429 patients were discharged cured, a gain of about 125 over the figures for the preceding year.

The Popularisation of Medicine.

Of late a marked tendency is becoming manifest among the medical profession, in large centres at least, to attack the problems of sanitation and the prophylaxis of disease from a somewhat new standpoint by appealing less to the sense of obedience in people and more to their intelligence in order to secure popular coöperation in instituting sanitary reforms. The matter of mosquito extermination has been exploited so thoroughly that now most educated persons are quite alive to the dangers from malaria, and in southern latitudes from yellow fever, attending the existence of collections of stagnant water that may form breeding-places for anopheles or stegomyia. In furtherance of this general plan of encouraging the dissemination of information regarding the laws of hygiene among the intelligent classes several of the prominent medical organisations are making arrangements for public lectures on suitable subjects. The Chicago Medical Society has already begun a series of such addresses and it has been found that they are very well attended. Recently Dr. George R. Webster spoke on tuberculosis before a large audience. Under the auspices of the New York Academy of Medicine a radical step has been taken in the announcement for Dec. 29th of a public lecture on the results of the work done by the two commissions appointed early in the year to investigate pneumonia and cerebro-spinal meningitis. The speaker will be Dr. Thomas Darlington, health commissioner of New York city, whose selection for the purpose is most appropriate. The project is regarded with much interest by the profession and it is hoped that being inaugurated under the ægis of so influential an organisation it will be developed in numerous other ways in order to serve as a connecting link in matters of scientific knowledge between medical men and the public.

A New Medical Municipal Officer.

A new medical officer with a salary of $2500 has been appointed for the city of New York. He is called the medical examiner for the finance department and it is his duty to investigate claims against the city for damages for personal injuries. This work has in the past been performed by the police department and it is expected that when the cases are all examined by a medical man the saving to the city will be considerable.

Dec. 28th, 1905.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Medical College for Lucknow.

IN connexion with the medical college which is to be established for the United Provinces at Lucknow in commemoration of the visit of T.R.H. the Prince and Princess of Wales to India, and for which several lacs of rupees have already been subscribed, it is proposed to add a branch college for women. This women's college will be named after the Princess of Wales. It will be completely separate from the college for men and there is ample space whereon to build it close to the Lady Dufferin Hospital. In this part of India there is no college for the highest medical training of women. There are only classes for female hospital assistants. It is hoped to get educated Indian women, Mahomedan as well as Hindu, to take up medicine. It is announced that the education in this college will be conducted with every regard for the customs of the country.

Expected Outbreak of Small-pox in Calcutta.

A warning has been issued in Calcutta with regard to a probable outbreak of small-pox during the early part of the new year. It is apparently based upon the epidemics which occurred in 1890, in 1895–96, and 1900–01, the intervening years being comparatively free. In 1900 about 1000 deaths occurred and in 1901 about 2000 deaths. During the past fortnight there have been several deaths reported. From old mortality tables of the city this five-year period appears to be tolerably constant. The epidemics seem to occur almost entirely in the first half of the year.

The Increasing Plague Mortality throughout India.

The plague mortality is gradually mounting up. For the week ending Dec. 9th the figures were the highest for the season—3834 cases with 3075 deaths being recorded, as against 3773 cases with 2890 deaths for the previous seven

days. Development is evidently going on all over the country. The details are :—

Bombay Presidency...	1438	cases	with	1062	deaths.
Madras Presidency ...	88	,,	,,	62	,,
Bengal Presidency ...	599	,,	,,	466	,,
United Provinces ...	831	,,	,,	761	,,
Punjab	403	,,	,,	359	,,
Burma	92	,,	,,	89	,,
Mysore State	155	,,	,,	140	,,
Hyderabad State ...	107	,,	,,	56	,,
Central India	84	,,	,,	84	,,
Rajputana...	17	,,	,,	16	,,

Notwithstanding the small amount of plague in the Madras Presidency during last year the various local boards spent Rs.6,75,720, or over Rs.2,16,692 more than in the previous year. Considering the small funds at their disposal for sanitary improvements this burden weighs very heavily.

Dec. 22nd, 1905.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Proposed Amendments of Medical and Dental Acts.

As mentioned in a previous communication, a Bill has been circulated in the Legislative Assembly of Victoria to amend the Medical Act. A conference of delegates from the various medical societies discussed the Bill and subsequently arranged a deputation to the Chief Secretary to discuss with him its main provisions. On the whole the delegates approved of the Bill and urged the Chief Secretary to do all he could to get it passed. They thought that the clause which made it compulsory for the Medical Board to hold an open inquiry when anyone charged a registered practitioner with "infamous conduct" was rather vague and loosely worded and suggested that the phraseology of the New South Wales Act was better. It was also thought that the board should be partly elective. Power should be given to the board to strike off the register the name of any practitioner who had been struck off the roll of the licensing body that granted the diploma under which he registered or who had been struck off the register in the country where he last practised. A conversational discussion ensued between the Chief Secretary and the deputation, in which the Minister said that the Bill had been drawn up by the Parliamentary draughtsman on suggestions made by the Medical Board and he had not seen it till it was circulated. He did not approve of the clause prohibiting practice by unqualified persons. He agreed that the board should be elective but not to giving it the power suggested to strike off names struck off elsewhere. He would look into the clause providing for inquiry into alleged infamous conduct. His difficulty was to define "infamous conduct in a professional respect." In consequence of the introduction of this Bill into the Victorian Parliament it is understood that a similar measure will shortly be introduced to amend the Medical Act of New South Wales, particularly with the view of excluding foreign qualifications unless the course of study required is equal to that demanded by the Australian universities. A Bill to amend the Dental Act has passed the Legislative Council of New South Wales and is now before the Legislative Assembly. It provides that in future all dental students must pass an entrance examination similar to the one imposed on students taking the degree of L.D.S. at Sydney University. The course of study must be four years. In recognising foreign diplomas for registration reciprocity is demanded. When the country in which the diploma to be registered was granted recognises the L.D.S. of Sydney University and when the course of instruction is considered by the Dental Board to be satisfactory the board can register. Another clause gives the Dental Board power to remove from the register the name of any person if such person—

(*a*) Does not possess the qualifications in respect of which he was registered; or (*b*) has been convicted of an offence which, if committed in New South Wales, would be a felony or misdemeanour; or (*c*) has been guilty of infamous conduct in any professional respect, misconduct, or of malpractice, either ignorantly, negligently, or wilfully; or (*d*) assumes any name, title, word, letters, addition, or description implying or leading to the belief that he is other than as described in the register, or as is permitted by the regulations made under the principal Act; or (*e*) practises or has practised since the passing of this Act under the name or style of any company, institution, hospital, college, school, or association.

Friendly Societies.

The report of the registrar of friendly societies for New South Wales for the years 1903-04 has been presented to Parliament. The total number of societies at the end of the year 1903 was 44 and at the end of the year 1904 it was 45. The increase in branches was 87 and 116 respectively. The Australian Natives' Association had decreased 30 per cent. in branch growth. The registrar, however, did not regard increase in branches as a test of the soundness of growth of a friendly society but thought that it could be better estimated by the maximum number of members per branch. The membership of friendly societies proper at the end of 1903 was 94,044, equivalent to an increase of 3·3 per cent. during the period. There were 15,718 persons sick during 1903 for an aggregate term of 93,439 weeks, at a total cost in sick pay of £74,017. The total exposed to risk for sick pay was 79,480 persons. Consequently, 19·8 per cent. of the persons entitled to sick benefits became claimants and each suffered on an average 5·9 weeks' illness.—On Nov. 25th the Premier of New South Wales, accompanied by the Earl of Jersey, laid the foundation-stone of a new dispensary and medical institute at Redfern, Sydney. The Redfern membership of the institute is 2121. The total membership is 9723, and last year 140,120 prescriptions were dispensed to 80,477 patients, members of 19 societies, represented by 127 lodges. Both the Premier and Lord Jersey expressed high approval of this and similar institutions.—At Grafton, New South Wales, a "battle of the clubs" is waging. Two of the three medical officers, Dr. Earle Page and Mr. T. J. Henry, to the Amalgamated Friendly Societies in the district have sent in their resignations. They undertook to resume their positions if certain alterations in the contract were conceded. The third medical officer, Mr. Ventry A. J. Smith, expressed satisfaction with existing conditions. The New South Wales branch of the British Medical Association has not discussed the position. The lodges are advertising for applications for the vacant posts, to accept which the *Australasian Medical Gazette* says "would only lead to professional and social ostracism."

Death of Dr. G. H. Macswinney.

The obituary of the month includes the name of Dr. George Henry Macswinney, at Chatswood, New South Wales, in his fifty-sixth year. He had been about six years at Chatswood and previously practised for over 15 years at Petersham. His undoubted skill as a practitioner was widely recognised and he was very popular. His death was sudden and unexpected. He leaves a widow and four daughters.

Dec. 9th, 1905.

Obituary.

JOHN ABERNETHY KINGDON, F.R.C.S. ENG.

Mr. J. Macready, F.R.C.S. Eng., who was for many years a colleague of Mr. Kingdon, sends us the following appreciation of his late friend, who died on Jan. 5th in the 78th year of his age :—

"John Abernethy Kingdon held the office of surgeon to the City of London Truss Society for 30 years, and during the last ten years of that period I had the good fortune to be associated with him and to become acquainted with his delightful personality. It is not for me to speak of his work for the Grocers' Company and for the various offices that he served in the City but what he did at the Truss Society comes well within my knowledge.

Mr. Kingdon was not an operator but was a very ingenious mechanician and all the best improvements in the trusses used by the society during the last 50 years came from him. He was very successful in reducing hernia. He knew at once what could be and what could not be reduced and his vast experience permitted him to use an amount of force sometimes in cases which others would have hardly dared to apply. He used to say that Vincent, one of the old surgeons of St. Bartholomew's Hospital, had been an adept at reducing hernia and I believe he founded his own method on what he had seen done by Vincent. With his very wide hand, in which the intrinsic muscles were strongly developed, he certainly effected extraordinary reductions. He had great influence upon those within his range, which he owed partly

to the confidence that his high and noble character inspired and partly to the charm of his manner and to his deep knowledge of human nature. When attention was drawn to his powers of persuasion he would say sometimes, 'Yes, I understand men.' It was his custom to address the patients in a racy vernacular which was very attractive to them and he soon won their confidence. He could do as he pleased with them, however painful his manipulations might be, and the interview generally ended by the patient saying, 'Oh, sir, you have such a nice way with you.' He had a great reverence for the 'Chosen People' and he was never so pleased as when an old Israelite lifted up his hands to Heaven and blessed him. No man better deserved the blessings of his fellow men. In all his dealings his own advantage was the last thing that he considered. He was most hospitable, generous, and charitable, almost to a fault. He was a humorous, a charming, and most endearing colleague."

ANGIOLO FILIPPI.

ON the threshold of the new year (writes an Italian correspondent) Italy finds herself "a man the poorer." Angiolo Filippi, her greatest worker and teacher in forensic medicine, an expert called to give evidence by nearly every tribunal in the kingdom, passed away with the closing hours of 1905 in his seventieth year. For some months back he had complained of what Sir William Gull used to call "tired heart," but with appropriate regimen and treatment and, above all, rest, he seemed to have given it a new lease of activity when an interesting and important necropsy intervened and the passion for work—a life-long as well as a "ruling" passion in his case—kept him in the pathological laboratory far beyond the time limit prescribed by prudence. Pleuritis of the left side declared itself. His pupil and colleague, Professor Stori, performed thoracentesis but with only temporary benefit. Exhaustion of the vital powers resisted all treatment from day to day till with the dying year departed Italy's most gifted and accomplished successor of Zacchia and Puccinotti.

Filippi came of a medical stock, his father Ermanno having been one of the professional lights of his native Tuscany. He was educated at the University of Pisa and after taking his degree in 1858 he went through a course of post-graduate medicine and surgery in the Florentine school. While still young he was nominated medical superintendent of the prisons at Pianosa, but in 1859–60, the years of Italy's "risorgimento," he was (like so many of his generous compatriots) swept into the volunteer ranks and did valiant service in Lombardy under Garibaldi. In 1865 he distinguished himself in the dire outbreak of cholera, practising unwearyingly and effectively during the epidemic at Ancona, San Severo, and Apricena—work which brought him the honorary citizenship of the Anconitan commune. Again immersed in surgical and pathological study in Florence, particularly at the great hospital of the Santa Maria Nuova and in the laboratories of Professor Pellizzari, he had once more to take the field in his country's cause—this time in the Venetian territory in 1866. On the fatal day of Custozza he showed great coolness and skill in tending the wounded, often within range of the Austrian fire, and at the instance of General Driquet he received the year following the medal for "military valour." From his experience in the campaign he acquired an exceptional skill in dealing with gunshot wounds, just as from his work during the cholera visitation in the Abruzzi he qualified himself to help Pacini in his well-known treatment of cases of "apparent death" from that disease. In 1867 he was appointed assistant to the Florentine professor of pathological anatomy, and thereafter promotion followed rapidly till in 1875 he became coadjutor to Professor Be lini, then occupant of the chair of medical jurisprudence in the Tuscan capital, and when that distinguished teacher died by his own hand he stepped into his post. The chair, already famed throughout Italy, became still more attractive under Filippi's teaching; but his yearly increasing audiences, swelled from other provincial schools, seemed to stimulate rather than to slacken his appeal to a yet larger public through the press. For the "Biblioteco Legale" he wrote the articles under the sections of "Thanatology" and "Traumatology"; while his contributions on "Aphrodisiology Civil and Criminal," and "La Venere Forense" were in such demand that they had to be transferred to an express publication in 1889. This was his "Manuale di Medicina Legale," which, reinforced by contributions from old pupils like Borri, Biondi, Montalti, and Severo, passed through edition after edition till it became an indispensable book of reference among jurists as well as medical men. It was the first treatise of its class to deal in a scientific spirit with the "infortuni di lavoro" (injuries received in manual labour). Among other benefits he endowed Florence with a laboratory for medico-legal research unrivalled in Italy and not surpassed abroad, while his methods of investigation and exposition were reproduced in other schools—such as those of Genoa, Palermo, Modena, Cagliari, Catania, and Siena—by pupils and imitators, either as professors or as *privat-docents*. In 1897, on completing his thirtieth year of medico-legal work, his old class assistants and other admirers combined to produce a volume called "Zacchia," after his famous predecessor, containing articles bearing on his special subject and dedicated to him as a memorial tribute, and on the same occasion congratulatory messages reached him from men of light and leading in all parts of the world, conspicuous among them being Virchow, Koch, Senator, Laiden, Strassman, and Brouardel. He was a proficient philologist and when complimented on the lucidity and finish of his style, written and oral, he would always give the credit of it to the classical studies which he never wholly dropped. Passionately devoted to the liberal arts he found time to do homage to the *genius loci* and could beguile his *horæ subsecivæ* with modelling in clay or with sketches in water-colours or in oils. A man so variously gifted, so touched to the finer issues, so kindly and so freehanded, could not but be the idol of his pupils and the pride of his colleagues and friends. Florence, literally *en masse*, assisted at his funeral which by his own request was without external display of any kind, and every interest—civic, academic, professional, and political—was gathered round his grave in the cemetery of the Misericordia at Soffiano.

JAMES HENRY CEELY, F.R.C.S. ENG., L.S.A.

Mr. James Henry Ceely, who died on Dec. 25th, 1905, at 54, Tregunter-road, South Kensington, London, S.W., had attained the great age of 96 years. He studied medicine at the London Hospital and took the diploma of L.S.A. in 1830. In 1832 he was admitted a Member of the Royal College of Surgeons of England and in 1852 was elected a Fellow. Mr. Ceely was a surgeon of no mean repute in Buckinghamshire. He was surgeon to the hospital at Aylesbury from its opening in 1832 to 1882 and it was one of his boasts that whilst there he performed 26 lithotomies (all lateral) without a failure or a death. His brother, Robert Ceely, was a distinguished man and is referred to in Bristowe's "Medicine" in connexion with the early work on vaccination. James Ceely became qualified in the days when the examinations were in several respects unlike those with which the present generation is familiar and when the examiners from different schools often pitted themselves against each other. He used to relate an amusing incident which occurred while he was under the ordeal in question. As already mentioned, he had studied at the London Hospital and Lawrence of St. Bartholomew's Hospital was examining him. His reply did not satisfy Lawrence and Blizard intervened to say that the candidate's reply was quite in accordance with the practice at the London Hospital and exactly what he should have done himself in a similar case. An animated discussion ensued and Ceely was allowed to pass without having any further questions put to him.

ROBERT JOHN CALLENDER, L.R.C.P. EDIN., M.R.C.S. ENG.

Mr. Robert John Callender of Haydon Bridge, Northumberland, died on Dec. 25th, 1905, in the seventy-fourth year of his age, and was laid to rest on Dec. 29th. For some long time it was known to his friends that he was in failing health and when he relinquished practice only a few weeks ago those who were his intimates knew that the end was probably approaching. He had been in practice in Haydon Bridge for about 35 years and his upright figure and rather rugged, though kindly, personality were well known and much respected in the surrounding country. Originally a student at the Newcastle-upon-Tyne School of Medicine in the middle of last century, he took

the diploma of M.R.C.S. Eng. in 1862 and those of L.R.C.P. and L.M. Edin. in 1867. From the time he started practice he devoted himself entirely to his work, taking no part in public affairs. He held the appointment of medical officer and public vaccinator of the fifth district of the Hexham union and acted as medical officer to the local branch of the Druids Friendly Society and was also a member of the British Medical Association. On June 18th, 1887, he published in THE LANCET an account of a case of puerperal pyrexia in which the administration of quinine proved useful. There are many who in times of trial found in him a true friend, and by those who mourn his death much sympathy is felt for his widow and family.

Medical News.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF ENGLAND.—The following gentlemen passed the first examination of the Conjoint Board in the subjects indicated at the January quarterly meeting of the examiners:—

Chemistry and Physics.—Thomas Mulholland Bellew, Liverpool University; Gerald Waddington Beresford, London Hospital and Wyggeston School, Leicester; Pleetwood Stirling Digby Berry, Guy's Hospital; Hilton Ross Brown, Charing Cross Hospital; Edward Moxon Browne, St. Bartholomew's Hospital; Ivo Geikie Cobb, St. Thomas's Hospital; Kaye Farquhar Rasbeil Davison, Westminster Hospital; Anthony Dias, St. George's and King's College Hospitals; Christopher Robson Dudgeon, Westminster Hospital; John Reginald Keith Fenning, London Hospital; Robert Francis Fuller, London Hospital; Alfred James Graves, Columbia University, New York; Bernard Grellier, Charing Cross Hospital; Gilbert Henry Colling St. George Griffiths, University College, Bristol; Arthur Martin Henry, Guy's Hospital; David Edward John Stopford Hughes, St. Bartholomew's Hospital; Thomas Hitchings James, London Hospital; James Phillips Jones, Guy's Hospital; Colwell de Calis Winkley Langdon, Edinburgh University and Victoria University, Manchester; William Ewart Latham, Liverpool University; Colin McIver, Madras University College and Polytechnic Institute; Leonard Milton, Guy's Hospital; Reginald Arthur Pittard, University College, Cardiff; Harry Platts, Guy's Hospital; George Lionel Preston, Technical School, Plymouth; Arthur Burch Rosher, Charing Cross Hospital; Harry Stobie, Charing Cross Hospital; Edwin Lawrance Sturdee, St. Bartholomew's Hospital; Stanley Walker Turtle, London Hospital; Victor Vesselovsky, St. Thomas's Hospital; Llewellyn Rhys Warburton, St. Thomas's Hospital; Percival Dillon Warburton, Sheffield; and Frederick Cecil Wright, St. Bartholomew's Hospital.

Elementary Biology.—Edward Charles Beddows, Birmingham University; Gerald Waddington Beresford, London Hospital; Gordon Normanby Brandon, St. Paul's School; Joseph Henderson Bulcock, Manchester University; Ronald Edgar Russell Burn, St. Bartholomew's Hospital; John Stanley Ellis, London Hospital; Edwin Llewellyn Zonas Fickling, Birkbeck College; Archibald Louis George, L.D.S. Eng., Guy's Hospital; George Frederick Corsellis Harvey, London Hospital; David Edward John Stopford Hughes, St. Bartholomew's Hospital; Timothy Joseph Killard-Leavey, Guy's Hospital; Mozaffer Dinn Ahmed Kureishi, King's College Hospital; Avenel Frederick Cleeve Martyn, St. Mary's Hospital; Alfred Philip Nicolle, London Hospital; Robert Sydney Overton, Birkbeck College; John Herbert Owens, London Hospital; Adrian Charles Paterson, St. Thomas's Hospital; Harry Platts, Guy's Hospital; Henry Golege Steel, St. Mary's Hospital; Mom Chow Thavara, Guy's Hospital; Frederic St. Barbe Wickham, St. Mary's Hospital; James Ernest Studholme Wilson, London Hospital; and Raphael Yood, Manchester University.

The following gentlemen passed the Preliminary Science Examination for the Licence in Dental Surgery:—

Ralph Chapman, Birkbeck College; Abraham Cohen, Northern Polytechnic Institute; Hubert Daw, Royal Albert Memorial College, Exeter; William Henry Edmonds, Polytechnic Institute; William Edwin Guilding, Guy's Hospital; Charles Cabread Jones, Guy's Hospital; Oswald Keighley, Birkbeck College; Isaac Levy, Guy's Hospital; Alfred Bunce Plank, Technical Institute, Liverpool; Edgar Eaton Solomon, Battersea Polytechnic and Birkbeck College; and Ernest Sutton Tait, Cranbrook School, Kent.

SOCIETY OF APOTHECARIES OF LONDON.—At the primary examination held recently the following candidates passed in the subjects indicated:—

PART I.

Biology.—W. M. Scott, Edinburgh and Belfast.
Chemistry.—G. F. Malden, Royal Free Hospital; and R. S. Minchin, St. Thomas's Hospital.
Materia Medica and Pharmacy.—I. Pulteney, Royal Free Hospital; and W. M. Scott, Edinburgh and Belfast.

PART II.

Anatomy.—J. Brierley, St. Thomas's Hospital; R. S. Carey, Cambridge and London Hospital; D. M. Hunt, London Hospital; J. A. Laughton, Charing Cross Hospital; H. E. Middlebrooke, London Hospital; F. G. Middleton, Birmingham; H. S. Naylor, Leeds; G. Packham, Guy's Hospital; B. Robertshaw, Manchester; and R. Rowlands, Glasgow.
Physiology.—J. Brierley, St. Thomas's Hospital; R. S. Carey, Cambridge and London Hospital; J. A. Laughton, Charing Cross Hospital; H. S. Naylor, Leeds; B. Robertshaw, Manchester; and R. Rowlands, Glasgow.

UNIVERSITY OF OXFORD.—The following degrees have been conferred:—

Doctor of Medicine.—Thomas Rowland Charles Whipham, New College.
Bachelors of Medicine and Surgery.—Harold Frankish, Worcester College; Henry Hugh Baker, University College; Henry Letheby Tidy, New College; Reginald Charles Jewesbury, Christ Church; James Sholto Cameron Douglas, Christ Church; and Herbert Chavasse Squires, Hertford College.

LONDON SCHOOL OF TROPICAL MEDICINE.—The following candidates at the recent examination of the school held in December, 1905, proved successful:—

J. M. Collyns,* H. M. Saurier,* J. C. S. MacDouall* (colonial service), E. R. Whitmore,* J. W. Arthur, J. Booth-Clarkson, H. L. Burgess (colonial service), H. Carlaw (colonial service), R. Cope (colonial service), R. Denman (colonial service), A. C. Falkiner, J. D. Finlay (colonial service), C. W. Holden, J. Hogg, T. C. Lauder, E. C. Lindsey (colonial service), M. Ramsay (colonial service), A. R. Rendle (colonial service), A. C. Rendle (colonial service), L. Sells, R. Small (colonial service), A. J. T. Swann (colonial service), F. M. Wakefield, and P. Wykesmith (colonial service).
* With distinction.

DEATH OF A CENTENARIAN.—Mr. Thomas Baker died at Highbridge, Somerset, on Dec. 22nd, 1905, at the age of 102 years. The deceased was born at Highbridge.

WE have been asked to say that the photograph of the late Sir John Scott Burdon-Sanderson, a reproduction of which appeared in our issue of Dec. 2nd, 1905, was taken by Messrs. Elliott and Fry.

To fill the vacancy caused by the death some months ago of Sir John Sibbald, the directors of the Century Insurance Company have elected Sir John Halliday Croom, professor of midwifery at the University of Edinburgh, to be a member of the board.

INFECTIOUS DISEASES IN LEICESTER.—During the year 1905 the following certificates of contagious and infectious diseases were received by the sanitary committee of the Leicester town council: Scarlet fever, 1099; smallpox, 5; erysipelas, 247; consumption, 224; diphtheria, 177; typhoid fever, 68; and puerperal fever, 20; total 1840.

MOUNT VERNON HOSPITAL.—Dr. E. F. Trevelyan of the University of Leeds will open the spring course of post-graduate lectures at the central out-patient department of the Mount Vernon Hospital, 7, Fitzroy-square, London, W., on Thursday, Jan. 18th, at 5 P.M. The subject announced is Modern Methods of Diagnosis and Treatment of Pulmonary Tuberculosis. Medical practitioners of both sexes and senior students are invited to attend.

THE RUSSIAN MEDICAL COUNCIL AND ADVERTISEMENTS.—The Russian Medical Council has turned its attention to a widely distributed advertisement by one John Craven Burley of Moscow, offering for sale a specific for encouraging the growth of, and strengthening, the hair. Finding that this advertisement, which was headed "I Was Bald," might lead the public into error the council decided that it should not be granted insertion in the press.

ST. BARTHOLOMEW'S HOSPITAL: LUTHER HOLDEN SCHOLARSHIP.—The first election to this scholarship, which was founded by the bequest of the late Mr. Luther Holden, consulting surgeon to St. Bartholomew's Hospital, will take place shortly. The scholarship will be of the annual value of 100 guineas and will be awarded by election. Candidates must hold a British qualification to practise surgery of not more than three years' standing and have been students of St. Bartholomew's Hospital for at least three years. The scholar will be elected for one year and will be eligible for re-election for a second or third year, and will be required by the regulations, which have been drawn up, to carry out such research work in surgery as may be approved by the electors either in the United Kingdom or abroad. A report of the work done must be sent by the scholar to the dean of the medical school one month before the expiration of the year. The electors are: the surgeons to the hospital, the lecturer on pathology, the warden of the college, and the dean of the medical school for the time being. Candidates are advised in their applications to give particulars of any appointments which they have held or any research in which they may have been engaged.

THE ANTWERP INTERNATIONAL EXHIBITION.—During the months of April and May, 1906 an International Exhibition will be held at Antwerp The main subjects for exhibition are foods, brewing, wines, and spirits but there is to be a section specially devoted to medicine, hygiene, and pharmacy. The exhibition is under the official patronage of Her Royal Highness the Countess of Flanders. All information about it may be obtained by application to the secretary's office, 26, rue d'Arenberg, Antwerp.

A MEETING of the Assistants of the Society of Apothecaries will be held on Jan. 23rd, at 8 P.M., in the court room of the Society's hall, Water-lane, Blackfriars, E.C., to discuss the advisability of forming an association. Ladies and gentlemen holding the Assistant's certificate are cordially invited. Those unable to attend, but who are in agreement with the suggested association, should communicate their views to Mr. Albert Howell, Hackney Union Dispensary, Rosebery-place, Dalston, N.E.

RUSSIAN MEDICAL MEN AND POLITICS.—It is stated in the *Pharmatzevtitcheski Journal* that the Pirogoff Society, in view of the present situation and the serious circumstances existing in Russia, does not find it possible to hold the usual congress of the society during this month. Nevertheless the society considers that the medical men should express themselves on the question of the day; therefore a Pirogoff congress will be called not for a scientific but for a political purpose. At that congress the question of fusing with the Medical Society League will be considered.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, W.C.

A Manual of Physiology. With Practical Exercises. By G. N. Stewart, M.A., D.Sc., M.D. Edin., D.P.H. Camb., Professor of Physiology in the University of Chicago. Fifth edition. Price 15s. net.

Surgical Diseases of the Dog and Cat. With Chapters on Anæsthetics and Obstetrics. (Second edition of "Canine and Feline Surgery.") By Frederick T. G. Hobday, F.R.C.V.S., F.R.S.E., Member of the Board of Examiners of the Royal College of Veterinary Surgeons, late Professor in the Royal Veterinary College, London. Second edition, revised and enlarged. Price 10s. 6d. net.

BELL, DEIGHTON, AND CO., Cambridge (GEORGE BELL AND SONS, London).

Pathology and Treatment of Rheumatoid Arthritis. By P. W. Latham, M.D., Fellow and Late Senior Censor of the Royal College of Physicians of London, Downing Professor of Medicine, Cambridge, 1874–1894. Price 1s. 6d. net.

CHATTO AND WINDUS, 111, St. Martin's-lane, W.C.

Herbert Fry's Royal Guide to the London Charities. Edited by John Lane. The First London Annual Charity Guide. New and revised edition—the forty-second. Price 1s. 6d.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.

The Management of a Nerve Patient. By Alfred T. Schofield, M.D., author of "The Unconscious Mind," &c. Price 5s. net.

CONSTABLE, ARCHIBALD, AND COMPANY, LIMITED, 16, James-street, Haymarket, S.W.

Lectures on Tropical Diseases, being the Lane Lectures for 1905. Delivered at Cooper Medical College, San Francisco, U.S.A., August, 1905. By Sir Patrick Manson, K.C.M.G., M.D., LL.D. Aberd., F.R.C.P. Lond., F.R.S., Hon. D.Sc. Oxon., Medical Adviser to the Colonial Office; Lecturer, London School of Tropical Medicine, St. George's Hospital Medical School, &c. Price 7s. 6d. net.

GRIFFIN, CHARLES, AND COMPANY, LIMITED, Exeter-street, Strand, W.C.

The Year-book of the Scientific and Learned Societies of Great Britain and Ireland. Twenty-second Annual Issue. Price 7s. 6d.

HAZELL, WATSON, AND VINEY, LIMITED, 52, Long Acre, W.C.

Hazell's Annual for 1906: a Cyclopædic Record of Men and Topics of the Day. Edited by W. Palmer, B.A. Lond. Price 3s. 6d. net.

HEADLEY BROTHERS, 14, Bishopsgate Without, E.C., and Ashford, Kent.

The Transactions of the Hunterian Society, 1904–1905. Eighty-sixth Session. Edited by E. W. Goodall, M.D. Price not stated.

JOHN BALE, SONS, AND DANIELSSON, LIMITED, 83–91, Great Titchfield-street, Oxford-street, W.

Indigestion: an Elementary Study of its Causes and Treatment. By Fernandez Clarke, L.S.A. Lond., L.R.C.P. Lond., M.R.C.S. Eng., &c. Price 2s. net.

MACMILLAN AND CO., LIMITED, London.

A Handbook of Climatic Treatment, including Balneology. By William R. Huggard, M.A., M.D., F.R.C.P. Lond., H.B.M. Consul at Davos, Switzerland. Price 12s. 6d. net.

OLIVER AND BOYD, Tweeddale-court, Edinburgh, and 16, Paternoster-row, E.C.

Natality and Fecundity: a Contribution to National Demography. By C. J. Lewis, D.Sc. (Public Health), M.D. Edin., F.R.C.P. Edin., M.R.C.S. Eng., Lecturer on Public Health, School of Medicine of the Royal Colleges, and Medical College for Women, Edinburgh, Examiner in Public Health, Royal College of Physicians, Edinburgh; and J. Norman Lewis, Fellow of the Institute of Actuaries, Fellow of the Faculty of Actuaries in Scotland. Price 7s. 6d. net.

PENTLAND, YOUNG J., Edinburgh and London.

The Edinburgh Medical Journal. Edited by Alexis Thomson, M.D., F.R.C.S. Ed., and Harvey Littlejohn, M.B., F.R.C.S. Ed. New Series. Vol. XVIII. Price not stated.

SCIENTIFIC PRESS, LIMITED, 28 and 29, Southampton-street, Strand, W.C.

Surgical Instruments and Appliances used in Operations. An Illustrated and Classified List, with Explanatory Notes. By Harold Burrows, M.B. Lond., B.S., F.R.C.S., Assistant Surgeon to the Bolingbroke Hospital. Price 1s. 6d. net.

WILLING, JAMES, JUNR., LIMITED, 125, Strand, W.C.

Willing's Press Guide and Advertisers' Directory and Handbook, 1906. (Thirty-third Year.) Price 1s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALLAN, JOHN, M.B., Ch.B. Edin., has been appointed House Surgeon to the Royal Alexandra Hospital for Sick Children, Brighton.

BALL, WALTER, M.B., B.S. Lond., L.S.A., has been appointed Resident Medical Officer and Registrar of the Cancer Wing of the Middlesex Hospital.

BROUGH, D., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Battle District of the County of Sussex.

BUCKLEY, GEORGE GRANVILLE, M.B., Ch.B., D.P.H. Vict., has been appointed Assistant Medical Officer of Health of the County Borough of Oldham.

FARNCOMBE, EDGAR LEONARD, M.B., B.Ch. Oxon., has been appointed Certifying Surgeon under the Factory and Workshop Act for the District of Chudleigh (Devon).

HASTINGS, SOMERVILLE, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Surgical Registrar to the Middlesex Hospital.

HOWELL, C. M. HINDS, M.B. Oxon., M.R.C.P., has been appointed Medical Registrar and Lecturer to the Nurses at the National Hospital for the Paralysed and Epileptic, Bloomsbury, W.C.

KEELING, G. S., M.B., B.C. Cantab., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

LEITCH, ARCHIBALD, M.B., Ch.B. Glasg., has been appointed Assistant to the Director of the Cancer Research Laboratories of the Middlesex Hospital.

MILSOM, E. G. D., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Assistant House Surgeon to the East Suffolk and Ipswich Hospital, Ipswich.

PRYCE, ETHEL J. M., M.B., Ch.B. Glasg., has been appointed Clinical Assistant at the Evelina Hospital for Sick Children, S.E.

SNELL, E. H., M.D., B.Sc. Lond., has been appointed Medical Officer to the Education Committee, Coventry.

STAMFORD, R. B., F.R.C.S. Edin., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Loughborough District of the county of Leicester.

STEPHENS, H. N., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE UNION.—Junior Resident Medical Officer. Salary £100 per annum, with rations, residence, and laundry.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund-street.—House Surgeon. Salary at rate of £70 per annum.

BRIDGE OF WEIR, CONSUMPTION SANATORIA AND COLONY OF MERCY FOR EPILEPTICS.—Medical Superintendent. Salary £250, with house and light.

BRISTOL, CITY AND COUNTY OF.—Public Analyst. Salary £450, rising to £600 per annum.

BURNLEY, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £500 per annum.

CHELTENHAM GENERAL HOSPITAL.—Junior House Surgeon, unmarried. Salary £60 per annum, with board and lodging.

CHESTER GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with residence and maintenance.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £50 per annum, with board, apartments, and laundress.

GLASGOW, CORPORATION OF.—Lady Medical Assistant. Salary £160 per annum.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—Two Anæsthetists. Honorarium 10 guineas per annum.

GREAT YARMOUTH HOSPITAL.—House Surgeon. Salary £90 per annum, with board, lodging, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians.

KING'S COLLEGE (UNIVERSITY OF LONDON).—Sambrooke Surgical Registrar.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

MIDDLESEX HOSPITAL, W.—Resident Casualty Medical Officer, unmarried, for six months. Salary £50 per annum.

NAPSBURY, NEAR ST. ALBANS, HERTS, MIDDLESEX COUNTY ASYLUM.—Assistant Medical Officer. Salary £160 per annum, with board, lodging, washing, and attendance.

NEW HOSPITAL FOR WOMEN.—Senior Assistant to the Children's Outpatient Department. Also two Clinical Assistants.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £90 per annum, with apartments, board, attendance, and washing.

PARISH OF ST. MARY, ISLINGTON.—Medical Officer and Public Vaccinator for No. 9 District. Salary £100 per annum and fees.

PLAISTOW AND DAGENHAM INFECTIOUS DISEASES HOSPITALS.—Resident Assistant Medical Officer. Salary £200 per annum, with rooms and board.

ST. PANCRAS INFIRMARY, Dartmouth Park-hill, N.—Junior Assistant Medical Superintendent. Salary £75 per annum, with residential allowances.

SEAMEN'S HOSPITAL SOCIETY.—Pathologist. Salary £100 per annum. Also Assistant Physician, Medical and Surgical Registrar, and Honorary Anæsthetist.

UNIVERSITY OF LONDON.—Examiners in Medicine, in Surgery, and in Pathology.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Fourth Assistant Surgeon.

YORK COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £120 a year, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeon under the Factory and Workshop Act at Cockermouth, in the county of Cumberland; at Innerleithen, in the county of Peebles; at Kirkby Stephen, in the county of Westmorland; at Beckenham, in the county of Kent; at Holbeach, in the county of Lincoln; and at Forfar, in the county of Forfar.

Births, Marriages, and Deaths.

BIRTHS.

BOYD.—On Jan. 7th, at Pretoria, Transvaal, the wife of J. J. Boyd, M.O.H. Pretoria, of a daughter.

HOBDAY.—On Jan. 7th, at Bridgefield, Muswell-avenue, N., the wife of James Hobday, M.B., of a daughter.

LUND.—On Jan. 6th, at Collingham-road, S.W., the wife of Kenneth F. Lund, M.B. Lond., of a son.

MENNELL.—On Jan. 5th, at Holland Park-avenue, W., the wife of Zebulon Mennell, M.B., of a daughter.

MARRIAGES.

KNIGHT—CHADBORN.—On December 9th, at St. Stephen's, Durban, Natal, by the Rev. C. S. Mills, Wilfred Edwyne Knight, M.B., L.R.C.P.E., son of Charles Frederick Knight, M.D., of Mount Charles, Portobello, and Chambers-street, Edinburgh, to Evelyn Louisa, fourth daughter of the late John Chadborn, of Barton House, Gloucester. No cards.

ROB—GRANVILLE-SMITH.—On Jan. 4th, at the Church of St. Peter and St. Paul, Swaffham, Norfolk, by the Reverend Vernon Granville-Smith, Joseph William Rob, M.D., of Oatlands Park, Weybridge, to Alice Maud, daughter of the Reverend Canon Granville-Smith, of Swaffham.

DEATHS.

EADIE.—On Jan. 8th, 1906, at West Coker, Somerset, Elizabeth Jane Eadie, wife of the late John Eadie, M.D. R.U.I.

HUGHES.—Leonard Sonstadt Hughes, F.R.C.S. Eng., L.R.C.P. Lond., at Feilding, North Island, New Zealand, on Nov. 12th, 1905, in his 40th year.

KINGDON.—On Jan. 5th, at 31, The Broadway, Westminster, during sleep, John Abernethy Kingdon, F.R.C.S., late of 2, Bank-buildings, Lothbury, in his 78th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE ADULTERATION OF SILK WITH TIN AND OF FLANNEL WITH EPSOM SALTS.

AN interesting communication has reached us from a correspondent living near Manchester on the subject of adulterated fabrics, his attention having been directed to the special article published under the above heading in our issue last week. We regret that we have not space to publish this letter in full, but we extract from it the writer's salient points. So far back as 1863, he states, it was his lot to take up a situation as a "procurer" of orders for an article then newly introduced as an adulterant of cotton goods. Very soon he was convinced that he was employed in an occupation "both dishonourable and dishonest." At great inconvenience to himself, having a wife and family to support, he relinquished his post. So impressed was he with the wickedness of the fraud that was being perpetrated that he determined to expose it and with the assistance of some friends he ultimately published a book in which appeared the following preface:—

> "In these pages the Author has narrated, in plain terms, his experience while engaged as agent in a business that his heart and head loathed, but which, to get bread for himself and family, he followed until his soul revolted from very shame, and, to preserve his own reputation, he felt compelled to withdraw and suffer anything rather than participate, however remotely, in the great game of Roguery he had seen played around him. Personally, he has no vindictive feelings towards manufacturers, and, although the language used to condemn their mal-practices is harsh and severe, yet it is no more so than the nature of their deeds deserve. Although there may be defects in the style and composition of this work, it is hoped that the plain facts will most attract the attention of the general public."

The reading of the article in THE LANCET has now inspired him to write a supplement to the book in the form of doggerel verse. We select three stanzas out of 12:—

> "The cotton goods you purchase
> Have in them much that's queer;
> Gum and alum, china clay;
> These are used to make it pay.
>
> The cotton goods you purchase,
> With them you are often cheated;
> Sulphate of soda—queer stuff—
> And old hide pickings, quite enough.
>
> It would puzzle me, and others too,
> To tell of all which these men do;
> In making goods for us to wear,
> They cheat us much, nor do they care."

The book was not a financial success and our correspondent, who is nearly 78 years of age, confesses to being very badly off and pathetically adds: "I shall be glad when my time comes for departure from this to a more pleasurable state of being, if I am found to be worthy thereof."

THE PRESS AS AN EDUCATIONAL POWER.

WE are quite convinced that the power of the press, if guided in the right paths, may be of great use in an educational direction. But occasionally the answers to correspondents upon medical matters in lay journals contain information which displays astounding ignorance. A notable example is now before us contained in a recent number of the *Weekly Dispatch* and it is as follows:—

> "*Toilet Powder.*—The 10 per cent. 'Amyli' in your prescription has reference no doubt to the hydrocarbon radical of the paraffin series to be found in amyl alcohol or fusel oil. Without the prescription we could not write in the missing ingredient.—Percy, Manchester."

It is, we think, just as well for the correspondent that the prescription was missing, for we tremble to think what "we" might have written in if the writer's medical knowledge is on a par with his knowledge of Latin and of chemistry!

QUOTATIONS FROM THE LANCET.

AGAIN we must protest against the objectionable and unfair practice adopted by some advertising firms of using quotations from THE LANCET without preserving the sense of the context. In our critical notices of foods, drugs, and medical appliances which are published from time to time for the guidance of our readers, we make it a rule of dealing with these things in an impartial manner, discussing not only their merits (if any) but their demerits (if any) also. Often, however, the quotations imply that we have written nothing but words of praise, whereas a reference to the context will reveal that in a great number of instances this is not the case. An instance of this appeared in an advertisement of "Vitæ Ore" in the *Times* this week. The statement used here was "THE LANCET says, 'the clinical results were satisfactory.'" It is perfectly true that THE LANCET did use these words, but it said a great deal more,

as will be seen from the original notice (THE LANCET, March 25th, 1899, p. 844), which we reproduce:—

"This preparation is regarded as 'a valuable and important discovery.' The discovery amounts to a recognition of the fact that ore containing pyrites or native sulphide of iron gradually oxidises in moist air into proto- and per-sulphate of iron. To the presence of these salts the medicinal value of the powder is attributed. Cold water readily extracts both the per- and proto-sulphate of iron. According to our analysis the ore yields 13·20 per cent. of ferric sulphate and 3·9 per cent. of ferrous sulphate. Iron in these forms is not usually prescribed, being regarded as unsuitable and leading frequently to digestive disturbance and decidedly constipating effects. The ore further contains unaltered sulphide of iron and free sulphur and a large residue of silicious matters, and presents in fact all the appearances of the crushed ore obtained from gold-bearing quartz. The clinical results obtained were satisfactory, but the preparation showed no superiority over 'Blaud's pills' or other remedies used in the treatment of anæmia."

In the advertisement referred to there is not even the indication of a context, which in this case, as in others, contains an important qualifying clause.

THE MEMBERSHIP OF THE SOCIETY OF APOTHECARIES.

To the Editors of THE LANCET.

SIRS,—Subsequently to obtaining the diploma of the Society of Apothecaries I was elected a member, and in due course sent in the usual form to the editors of the Medical Directory, including the fact of membership; on noticing the omission of the membership diploma (M.S.A.) after my name I wrote to the editors asking the reason and received the inclosed reply. I am, Sirs, yours faithfully,

Sale, Cheshire. C. ADOLPHE K. RENSHAW.

[INCLOSURE.]

29th Dec., 1905.

DEAR SIR,—In reply to your letter of the 28th inst. we have to say that we purposely omitted the membership of the Society of Apothecaries as this is not a medical qualification. The membership has been inserted in the past, but it is our intention to omit this in future. Yours faithfully,

pp. the Editors,
CHARLES JACKSON.

*** About the advisability of including the title of M.S.A. in the Medical Directory something can be said on either side. The title is not a medical one, so that the intention of the editors of the Medical Directory to omit it has some point, but the same argument can be applied to D.C.L., LL.D., and M.A., to all orders and grades of knighthoods, to F.R.S., F.L.S., F.C.S., and so on. Curiously enough, the gentleman who this year comes next to our correspondent in the Medical Directory is described as M.S.A.—ED. L.

SANDOW DEVELOPMENT TREATMENT: A WARNING.

To the Editors of THE LANCET.

SIRS,—With regard to "J. G.'s" letter under the above heading I would recommend to his notice a small book and card, price respectively 2*s.* 6*d.* and 6*d.*, published by the Anglo-Danish Publishing Company, 188, Strand. The exercises have been familiar to me for many years when the author was a little boy, but I have never seen them so well organised and, as will be seen, no apparatus is required. They are collected by J. P. Muller, who calls them "My System," and have the advantage of taking only 20 minutes in time and can be mostly performed in an ordinary bathroom, Exercise 8 being done against the side of the bath. I am, Sirs, yours faithfully,

Brook-street, W., Jan. 9th, 1906. TOM BIRD.

AN OPHTHALMOSCOPIC LAMP.

WE have received from Mr. J. T. Gradon of Oxford a lamp and shade which he has devised for ophthalmoscopic work. It consists of an electric lamp in a small black japanned box which can be held in the hand. Mr. Gradon argues that beginners in direct ophthalmoscopy have great difficulty in keeping the ray of light from a fixed lamp on the patient's eye, but he considers that by the use of his lamp the hand and mirror of the observer will adjust themselves in concert. The apparatus is handy and convenient, but, we think, unnecessary. It is always bad policy for any medical man to accustom himself to work only with certain instruments and anybody who knows enough about ophthalmoscopy to benefit his patients should be able to work with any source of light. Mr. Gradon's lamp can also be used with a candle and in this way the apparatus might be useful for country practitioners to take out on their rounds. It may be obtained from Messrs. Newbold and Co., 72 and 74, Gray's Inn-road, London, W.C.

TYPHOID AGGLUTOMETERS.

M.O.H. writes that he would be glad to have the opinion of his fellow practitioners who have tried Messrs. Parke, Davis, and Company's typhoid agglutometers as to their trustworthiness. He has tried them in some half-dozen cases with apparently satisfactory results. "If these agglutometers," he says, "are as reliable as the ordinary Widal's test (and there seems no reason why they should not be) they are very convenient for use, especially in country districts." We have already reported upon the agglutometers in THE LANCET in favourable terms (THE LANCET, June 3rd, 1905, p. 1505).

Mr. W. Jarvis.—There are considerations attaching to the different degrees mentioned which give each of them a particular value. Medical men do not recognise that one medical degree is "higher" than, or "senior" to, another. The proceedings in the medical curriculum of each will be found in the Students' Number of THE LANCET, and every curriculum is under the supervision of the General Medical Council whose duty it is to see that medical education is maintained at a high uniform standard.

Hastings.—We do not know of any central society doing such work. Arrangements are made by certain public bodies and certain local societies for disseminating the sort of information and our correspondent might get into communication with some of these bodies if he addressed a letter to us stating exactly what he thinks is required by the public.

L.A.—The General Medical Council would probably caution the offender if the matter were brought before it. We doubt if the Council would collect information for itself. At least one medical column appears in lay papers signed by a medical man and the medical man's name remains on the Register.

M.D. Braz.—We do not know of the existence of any such by-laws.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

TUESDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.).

WEDNESDAY (17th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (18th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

FRIDAY (19th).—London (2 P.M.), St. Batholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.).

SATURDAY (20th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (16th).—CHELSEA CLINICAL SOCIETY (Chelsea Dispensary, Manor-street, King's-road, S.W.).—8.30 P.M. Communications:—Dr V. Dickinson: Recurrent Vomiting with Acetonæmia in Children.—Dr. E. Pritchard: The Training of Nerve Centres in Children.

PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Dr. A. E. Wright and Dr. S. R. Reid: Notes on Two Cases of Coli-cystitis treated with Inoculations of Bacillus Coli.—Dr. A. E. Wright: A Note on Phagocytosis of Red Blood Corpuscles.—Mr. L. Dudgeon: On a New Method of Distinguishing Bacillus Typhi and Bacillus Coli.—Dr. J. Freeman: On the Relationship of the Temperature to the Opsonic Curve in Acute Anthrax Infection.

WEDNESDAY (17th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Annual Address:—The President: The Life and Work of Bernard Renault.

SOCIETY OF ARTS (John-street, Adelphi, W.C.).—8 P.M. Dr. W. A. Aikin: The Scientific Aspects of Voice Development.

FRIDAY (19th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos-street, Cavendish-square, W.).—5.30 P.M. Cases and Specimens will be shown by Dr. C. W. Chapman, Dr. L. Guthrie, Dr. J. G. Emanuel, Dr. C. O. Hawthorne, Dr. R. Hutchison, Dr. E. Cautley, and Mr. N. B. Harman. Short Papers:—Dr. F. J. Poynton: Jaundice.—Dr. P. Lewis: Erythema Multiforme.

EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Paper:—Mr. W. Hunting: Glanders in the Horse and in Man.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (15th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Davis: Some Common Diseases of the Pharynx and Larynx—Treatment.

TUESDAY (16th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Russell: Anæmia. (Lecture I.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture:—Dr. Beevor: Cerebral Circulation (Demonstration of Infected Brains).

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Colney Hatch Asylum, New Southgate, N.).—3.30 P.M. Dr. H. Corner: Demonstration on States of Mental Exaltation.

WEDNESDAY (17th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Robinson: Selected Subject in Gynæcology.

THURSDAY (18th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Practical Surgery. (Lecture I.)

CHARING CROSS HOSPITAL.—4 P.M. Mr. S. Boyd: Demonstration of Surgical Cases. (Post Graduate Course.)

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Lecture:—Mr. Doran: On Pain associated with Uterine Fibroid Disease.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M. Dr. M. Dockrell: Bullous and Vesicular Eruptions (continued): V., Herpes; VI., Zoster; VII., Dermatitis Herpetiformis. (Chesterfield Lecture.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Introductory Lecture:—Prof. R. F. Trevelyan (Leeds): Modern Methods of Diagnosis and Treatment of Pulmonary Tuberculosis. (Post-Graduate Course.)

FRIDAY (19th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Russell: Anæmia. (Lecture II.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture:—Dr. Beevor: Hemiplegia.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—Lecture:—Mr. R. P. Brooks: School Life as a Cause of Eye Disease.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1905, which was completed with the issue of Dec. 30th, were given in THE LANCET of Jan. 6th, 1906.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 11th, 1906.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. in Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 5	29·72	S.W.	0·27	59	53	48	49	50	Raining
" 6	29·24	W.	0·46	53	51	46	46	50	Cloudy
" 7	29·77	W.	...	61	49	40	41	44	Fine
" 8	29·18	W.	0·21	69	49	40	41	43	Fine
" 9	29·54	SSW	0·01	64	53	40	43	44	Raining
" 10	29·51	S.W.	0·13	63	47	41	40	42	Fine
" 11	30·15	W.	...	53	42	36	36	37	Foggy

During the week marked copies of the following newspapers have been received:—*Daily News, Edinburgh Evening News, Longton Times, Wolverhampton Midland Express, Yorkshire Post, Wigan Observer, Westminster Gazette, Birmingham Post, Daily Telegraph, Hampshire Advertiser, Southampton Echo, Acton Gazette, Morning Advertiser, Newcastle Chronicle, Herts Mercury, Scientific American, Glasgow Herald, &c.*

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